CHAPTER 10
CONCLUSION

10.1 Introduction

This chapter summarises the main findings of this research by reviewing the research objectives established in Chapter 1 and refined in Chapter 2 against the results and discussions described in the subsequent chapters. Chapter 9 examined the inter-relationships of the results, the limitations of the study and identified further useful research directions. This chapter examines the broader application of the results of this research for the natural resource management, volunteer and tourism sectors.

10.2 Key Aims and Objectives of this Research

This research aimed to examine an area that created or supported positive partnerships between tourism and conservation, and specifically environmental field research. Potential benefits had been hypothesised and this research aimed to clarify the benefits recognised by three key stakeholders, the field crews (as contributors to the supply of trips), the volunteers (as contributors to the demand for trips) and the organisations that link these together. Operations within the PERT sub-segment require linkages between these stakeholders to be created and for these formal or informal partnerships to be viable in the long-term, each partner must recognise they accrue desired benefits from the relationship.

Before undertaking an analysis of benefits, short-term volunteer tourism that contributed to environmental field research needed to be examined to determine whether the area of PERT could be considered a sub-segment within the wider volunteer tourism market. Chapters 4 and 5 examined the PERT sub-segment globally, and within Australia, and the results (Ellis, 2003a, 2003b) indicated a number of distinguishing characteristics of the PERT sub-segment. These were:

- travel;
- active participation by members (hands-on role);
- ecological field research or data collection was the primary goal;

- advertised publicly;
- non-specialist volunteers used;
- short-term in nature;
- financially supported the research project; and
- a 'fixed date' trip.

Identification of the PERT sub-segment enabled analysis of the current size and style of operations. A global search conducted in 2001 revealed the PERT sub-segment was small, marine and terrestrial mammal trips were the main subjects of research, around half the trips were conducted in the Americas, and North America was the principal location for the organisations' headquarters operating these trips. Some regional differences appeared to exist between European and North American operations. However, as this research focussed on English-speaking trips, Continental Europe and other areas were under-represented and further work is needed to explore global variations. Analysis, including comparative work between 2001 and 2003, revealed that the area is dynamic, an aspect consistent with an emerging product market. The literature review noted a number of factors from within volunteering, tourism and natural resource management that are likely to have contributed to the emergence of the sub-segment and as the area becomes better known on both the demand and supply side, continued growth is likely to occur.

Having identified operations within the PERT sub-segment, information concerning participants on PERT-style trips was reviewed, achieving the second key research objective 'to determine the characteristics of the volunteers who participate in these trips'. The global search revealed little prior information was available on participants, but participants were more likely to be female, well-educated, professional and people generally joined individually, not in groups. The detailed case study work within Australia produced very similar findings. Participants on PERT trips were generally over 45 years old, female, well-educated and travelled within their own country, or outside it, to undertake a PERT-style volunteer tourism trip. Previous researchers had often focussed on international volunteer tourism (Wearing, 2001; Broad, 2001; Galley

and Clifton, 2004; Callanan and Thomas, 2004), but the research discussed in this thesis showed domestic participation was dominant for the two organisations case studied, and significant for the third. This substantially broadens the understanding of the sub-segment marketplace and has implications for the outcomes of stakeholders.

Previous research in volunteer tourism had generally examined youth trips or found high levels of younger participants. Although a minimum age is applied by most organisations, this research demonstrated that while all adult age categories appear to participate, higher levels of older people participated in the trips surveyed. However, considerable variation in demographics can exist between individual trips. These findings demonstrate that a broader target market may exist than indicated by earlier research. The financial contributions involved with PERT-style trips, and other characteristics such as the short duration (less than four weeks) meant that the participant profiles were similar to the results from a number of hard-core ecotourism studies.

To ensure the long-term viability of a PERT operation and the growth of this type of volunteer tourism each of the three key stakeholders need to achieve at least some of their goals. The analysis of the benefits accrued by several stakeholders and the inter-relationships existing in this process extends earlier work done within volunteer tourism. This research aimed to determine:

- the reasons volunteers joined, and the benefits that volunteers perceived they gained from participating in the trips;
- the reasons why the organisations were involved with trips, and the extent to which the organisational goals were achieved;
- the reasons why members of field crews were involved with trips, and the extent to which they considered they achieved their goals; and
- the inter-relationships between the goals and benefits of the organisation, the members of the field crews, and the participants.

The reasons participants joined the trips and the benefits they received from participation varied greatly, but overall a combination of ecotourism and volunteering motivations and benefits, were recorded with learning being a dominant reason for joining, as well as altruistic aspects. Although volunteering can appear to be work, it is undertaken as a leisure activity and the durable benefits Stebbin's (1982) identified as outcomes of serious leisure appeared valid within the PERT sub-segment. This supports the findings of other researchers who also noted the validity of serious leisure theory in the field of volunteer tourism (Broad, 2001; Wearing & Neil, 1997). However, the research in this thesis extended the earlier work as on-going involvement is a requirement of serious leisure and the long time frame of this research provided a greater understanding of the on-going commitment of participants to the area of environmental volunteering, research or conservation.

Key reasons why organisations and members of the field research teams were involved with the PERT sub-segment concerned the free labour and financial support that allowed field research objectives to be achieved. Both participants and members of the field crews noted significant personal rewards were derived from learning, stimulating conversations, meeting of like-minded people and camaraderie. These increased the overall enjoyment and also helped the achievement of work goals.

Education was important to all three stakeholders. Both direct and indirect benefits were noted and the dependency on other stakeholders was high in terms of achieving goals surrounding learning. PERT trips influenced some people not currently active in local conservation work, to become more active in volunteering, either locally, or through repeat episodic volunteering. In addition, over 80% of the participants indicated they had acted on the learning and skills they had gained during the trip in some way. Fifty per cent of participants stated they had increased their frequency of undertaking a stated pro-environmental behaviour and the trips had also increased the efficacy with which existing behaviours were undertaken. Learning gained by members of the field crews gained was also substantial with 85% stating this as an accrued benefit.

The experience and maturity that arose from using older, well-educated participants had a significant impact on the achievement of work-related goals and learning for field crews. Residency within the same state as the trip, post-trip membership of environmental, conservation or outdoor recreation organisations, and post-trip local volunteering appeared to enhance the re-utilisation of skills and knowledge gained, reinforce durable benefits and encourage further, or continued, behaviour modification. However, the extent of post-trip behaviour modification, the demonstration of cause and effect, and the factors influencing subsequent decision-making in the post-trip period require further research.

The research discussed in this thesis contributed to an increased understanding of why members of field crews and volunteers joined these trips and increased the ability of operations to target market both supply and demand. In addition, differences were noted between the reasons volunteers joined this type of trip for the first time and wished to take another trip. Earlier research in volunteer tourism had not focussed on repeat behaviour, and the research described in this thesis indicated that there is a high level of repeat behaviour with the same organisation and participants also indicated a strong desire to repeat. Understanding repeat behaviour is important as it alters the achievement of organisation and field crew goals and impacts program design for operators. Further work is needed to identify the processes that encourage the cumulation of durable benefits between periods of episodic volunteering as this continued receipt of benefits is likely to aid organisations in retention and continued supply of episodic volunteers.

The results demonstrate that the chosen exploratory approach was suitable for this research. Prior research was limited and had usually concentrated on one aspect, one trip, or a single project. This research aimed to provide a broader understanding of the area, starting with a global search that allowed the defining characteristics and size of the PERT area to be established. The analysis of three stakeholder groups across three case studies in the second stage further strengthened the results and although multi-

method approaches have been criticised for being difficult to replicate, the detailed description of the approach provided here minimises this and the breadth of the results support the approach taken.

After stage one it was argued that PERT was a distinct area within volunteer tourism (Ellis, 2003a, 2003b). It is acknowledged that segmentation rarely results in the identification of distinct groups of travellers that can clearly be separated from other groups (Dolnicar, 2005), but the subsequent research in stage two revealed some differences, confirming the initial argument. The older profiles, high level of repeat behaviour, and inter-relationships between the key stakeholders in terms of achieving goals, confirmed that operators in the PERT sub-segment have considerations that are different to operators in other areas, such as long-term, GAP-style youth volunteer tourism. Also each set of stakeholders generally considered the area to be distinct and for instance, some members of field crews noted specific differences in these trips compared with other volunteer and volunteer tourism work.

10.3 Summary

The research described in this thesis was exploratory in style and aimed to extend the understanding of how tourism and conservation can work positively together. Because of the difficulties natural resource managers face in funding field research, particularly longer running projects, the focus of this research was on volunteer tourism. Previous research in the area existed, but had tended to examine one organisation or trip, international volunteer tourism and often trips aimed at the youth market.

This research extended the understanding of the volunteer tourism market significantly by identifying PERT-style trips as a sub-segment. The older demographics, and high level of repeat behaviour within the PERT sub-segment, as well as the distinguishing characteristics this research identified, separate this type of volunteer tourism from other forms. This research also examined the range of benefits stated by three key stakeholders, participants, organisations, and members of field crews, and showed there was high satisfaction with existing trips. The benefits accrued by members of each

group were substantial and in particular, the benefits to field crews were much broader than has previously been recognised. The benefits each group achieved were also inter-related. The perceived benefits of participants were examined over time and this approach revealed that a high level of participants considered that they had altered either the frequency, or efficacy, with which they undertook a post-trip pro-environmental behaviour because of the trip. Further work examining post-trip decision-making surrounding topics of interest, such as specific pro-environmental behaviours is needed.

Much wider implications of the results were also evident during this research. PERT trips attract members of the public not currently active in local conservation work and help develop on-going volunteering through continued episodic volunteering and via local volunteering. Opportunities to attract and retain new volunteers are important as future shortfalls in volunteer supply have been suggested. PERT-style trips also provide a mechanism whereby tourism can positively support environmental field research and assist natural resource managers achieve their goals. This research indicated that the breadth of benefits was much greater than the free labour and funding components usually discussed. Concepts such as the continued accrual of durable benefits during the post-trip phase of travel have implications for volunteer managers seeking to encourage and retain episodic volunteers and tourism operators seeking repeat business. Further work is needed, both within the PERT sub-segment, and extending the application of this research into the wider tourism and volunteering fields.

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Appendix 1

Comparative socio-demographic profiles - PERT participants, volunteers and ecotourists.

This table contains a selection of relevant data from different case studies. Generally, more recent Australian examples, 'hard core' ecotourism, and volunteer data from similar Western countries were selected.

	PERT	Volunteers	Ecotourists
Younger	•Earthwatch Australian residents 1988-1991, the highest participation rate was 26-35 year olds, 31% (Weiler and Richins, 1995:33). •A Canadian whale researching group, CERF, stated 21% of participants were under 19 years old, and 22% were 19-29 years old (Megill, 2001). •Earthwatch Europe data stated 11% of participants were under 20 years old and 28% were 20-29 years old (Earthwatch Institute, 2000). •Earthwatch global data stated 15% of participants were under 20 years old and 16% were 20-29 years old (Earthwatch Institute, 2001).	•20-24 year olds have the highest rate of total population volunteering in environmental/ animal care at 2.9% (Bureau of Labor Statistics, 2003). •80% of participants on a volunteer tourism program in Thailand (long term) were 20-30 years old (Broad, 2001:205-6) and the average age was 25 years (Broad, 2001:256). •Of the Australian population, the most active age group of volunteers are 35-44 years at 40% (ABS, 2001a:13). •Of the USA population, 35-44 year olds have the highest volunteer rate (34.7%) followed by 45-54 year olds. (Bureau of Labor Statistics, 2003). •Most volunteers with the Department of Conservation and Land Management (CALM) in Western Australia are between 35 and 45 years old (Ingram, ?:30). •The World Values Survey 1981-1990-1995 data indicated 18-24 year olds were the most likely to be active members of environmental organisations (World Values Survey Association).	•Of the total Canadian population, the young population had the highest per cent (17%) of previous participation in a hands-on learning experience on vacation in last 2 years (Lang Research, 2001:6). •A study of hard-core ecotourists in Lamington National Park, Australia found they were significantly younger than other ecotourists (mean 47.2 compared to 50.3 years) (Weaver, 2002:32). •Ecotourists in Taiwan had an average mean age of 33.7 and were considered mostly to be mostly recent graduates (Tao, Eagles and Smith, 2004:157) •More specialised wildlife viewers are younger, with an average age of 45 years, compared with intermediary (46 years) or novice (51 years) wildlife viewers in Montana (Martin, 1997:6).

	PERT	Volunteers	Ecotourists
Older	•Earthwatch, in the early 1990s, 9% of participants were aged 65 or older (Speer, 1994:21). •Earthwatch Australian residents 1988-1991, 3% were older than 65 years and 11% were 56-64 years old (Weiler and Richins, 1995:33). •Earthwatch Europe data stated 5% were over 60 years old, (Earthwatch Institute, 2000). •Earthwatch global data stated 16% of participants were over 60 years old, (Earthwatch Institute, 2001 and Earthwatch Institute, 2003b). •Landscope Expeditions 1992-2003, 39% were 55 years or older (Appendix 11). •A Canadian whale researching group, CERF, stated 10% of participants were 60 years or older (Megill, 2001).	•Of all Canadians who volunteer, 23% were 65 years or over (Hall et al, 2001). •45% of people aged 65 years and over are volunteers in the UK (Institute for Volunteering Research, 1997:3). •The 65-74 year old age group contributes the highest median hours of volunteer work per week, 2.5 hours, in Australia (ABS, 2001:15). •Australian volunteers aged 65-74 years devote more time to volunteering than younger volunteers (Warburton et al, 2001:587).	•The average age of ecotourists in a Canadian study was 54 years old, and the main cohort were 60-69, (Fennell and Smale in Fennell 1999:58). •19% of Australian dolphin ecotourists were over 50 years old, (Mayes, Dyer and Richins, 2004:47). • An Australian hard core ecotourist cluster had a mean age of 47 years (Weaver, 2002:32). •3.1% of Australian dolphin swim ecotourists were over 50 years old, (Mayes and Richins, 2003:488). •The mean age of birdwatchers surveyed in Canada was 51 years (McFarlane, 1994:365). • Over 55% of ecotourists surveyed in a study at Lamington National Park, Australia, were 45 years or older. (Beaumont, 1999:19).

	PERT	Volunteers	Ecotourists
Proportion of females	•71% of participants at a Canadian whale research project were female (Megill, 2001). •60% of global Earthwatch participants were female (Earthwatch Institute, 2001 and Earthwatch Institute, 2004b). •64% of Earthwatch Europe, 2000 participants were female (Earthwatch Institute, 2000). •69% of the Australian-based Earthwatch sample were female (Weiler and Richins, 1995:33). •60% of participants on an Australian Earthwatch project from 1988-1994 were female (Gilmour and Saunders, 1995:631). •57% of all Landscope Expedition participants from 1992-2003 were female (Appendix 11). • 76% of participants on two Earthwatch orang-utan project trips in 1992 in Indonesia were female, (Russell, 1995:154).	•33% of all women in Australia volunteer compared with 30.5% of males (ABS, 2001:13). •56% of all highly committed volunteers in Australia are female (Lyons and Hocking, 2000:45). •More women (32.3%) volunteered than men (25.1%) for total USA population (Bureau of Labor Statistics, 2003). •More women (28%) in the Canadian population volunteered than men but men gave more total hours (Hall, McKeown and Roberts, 2001). •More men volunteered for environmental or animal care work (1.9%) than women (1.5%) for total USA population (Bureau of Labor Statistics, 2003). •Men and women contribute equal average annual hours in environmental/ animal welfare volunteering in Australia (ABS, 2001a:27). •60% of participants on a volunteer tourism program in Thailand (long term) were female (Broad, 2001:205-6). •63% of volunteer tourists (mostly students) on trips with Operation Wallacea in Indonesia were female (Galley and Clifton, 2004:74). •No significant gender difference between active members of Norwegian environmental organisations (Olli, Grenstad and Wollebaek, 2001:194). •The World Values Survey 1981-1990-1995 data indicated men (2.9%) were more likely to be active members of environmental organisations than women (2%) (World Values Survey Association).	•45% of ecotourists were female in a Canadian study (Fennell and Smale in Fennell 1999:58). •61% of Australian dolphin ecotourists were female (Mayes, Dyer and Richins, 2004:47) • A study of hard-core ecotourists in Lamington National Park, Australia, found 73% were female and 62% of other ecotourists were female (Weaver, 2002:32). •73% of Australian dolphin swim ecotourists were female (Mayes and Richins, 2003:488). • Almost 54% of ecotourists in a study done in Lamington National Park, Australia, were female (Beaumont, 1999). •Equal proportions of men and women in the Canadian population had undertaken a hands-on learning experience on vacation in the last 2 years but more females intend to in the future (Lang Research, 2001). • Fewer women than men in the USA had undertaken a hands-on learning experience on vacation in the last 2 years (Lang Research, 2001). •41% of visitors to the Hawk Mountain Sanctuary, USA, were female (Bildstein, 1998:438) and most birding venues received more male visitors. • 39% of birdwatchers in a study at Sabal Palm Sanctuary, Texas were females in 1994-5, (Kerlinger, Eubanks and Payne, 1995). •54% of visitors by ship to Antarctica in a 1994-96 survey were male (Bauer, 2001:151). •58% of Antarctica overflight tourists in a 1994-95 survey were female (Bauer, 2001:170) and 51% in a 1996-7 survey (Bauer, 2001:176).

	PERT	Volunteer	Ecotourists
Well-educated	•94% of Earthwatch participants attended or graduated from college (Earthwatch Institute, n.d. [b]). •41% of Earthwatch participants have a post-graduate degree (Earthwatch Institute, 2003b). •63% of an Australian-based Earthwatch sample had completed some university or had higher qualifications (Weiler and Richins, 1995:34). •64% of participants on an Australian Earthwatch project from 1988-1994, had some tertiary education Gilmour and Saunders (1995:631). •44% of all Landscope Expeditions participants from 1992-2003, had completed a University degree or higher (Appendix 11).	•32% of all highly committed volunteers in Australia have a degree or diploma (Lyons and Hocking, 2000:45). •College graduates have the highest volunteer rate (46%) for the total USA population (Bureau of Labor Statistics, 2003). •College graduates have the highest volunteer rate in environmental and animal care (2%) for the total USA population (Bureau of Labor Statistics, 2003). •Over 75% of participants on a volunteer tourism program in Thailand (long term) had a Bachelor degree of higher (Broad, 2001:205-6). •The World Values Survey 1981-1990-1995 data indicated more highly educated people were more likely to be active and inactive members of environmental organisations (World Values Survey Association).	•Two-thirds of ecotourists in a Canadian study had an undergraduate or higher degree (Fennell and Smale, in Fennell 1999:58) •40% of Australian dolphin ecotourists had a bachelor degree or higher (Mayes, Dyer and Richins, 2004:47). •Over 70% of birdwatchers surveyed in Canada had a college or university education (McFarlane, 1994:365). •A study of ecotourists in Lamington National Park, Australia, found 51% of hard-core ecotourists and 56% of other ecotourists had a Bachelor degree or higher (Weaver, 2002:31). •46% of Australian dolphin swim ecotourists had a university degree or higher education (Mayes and Richins, 2003:488) •18% of the sample that had undertaken a hands-on learning experience on vacation in the last 2 years (USA and Canada) had a university or college qualifications (Lang Research, 2001). • 64% of ecotourists in Taiwan had completed, or were at, graduate school or university (Tao, Eagles and Smith, 2004:157-8) •66% of Canadian ecotourists had a University degree (Eagles and Cascagnette, 1995:25). •More specialised wildlife viewers are more highly educated than intermediary or novice wildlife viewers in Montana (Martin, 1997:7).

	PERT	Volunteers	Ecotourists
Professional/ employment	•32% of participants at a Canadian whale researching project were professionals and academics (Megill, 2001) •Globally in 2002, 25% of Earthwatch participants were professionals, 16% educators, 14% managers/administrators, and 13% scientists, engineers, and computer workers (Earthwatch Institute, 2003b). •51% of an Australian-based Earthwatch sample were classed as professional (Weiler and Richins, 1995:34). • 81% of participants on 2 orang-utan Earthwatch projects in 1992 were in professional jobs (Russell, 1995:154).	•Professionals have the highest participation rate in volunteering (46%) compared with the total population in Australia (ABS, 2001a:17). •Almost half of the volunteers with the Department of Conservation and Land Management (CALM) in Western Australia are in full-time employment (Ingram, ?:30). •Australians aged 65-74 years who volunteer are more likely to be in paid work than the same aged non-volunteers (Warburton et al, 2001:589).	•30% of ecotourists surveyed in study at Lamington National Park, Australia, were professionals (Beaumont, 1999:20). •70% of visitors by ship to Antarctica in a 1994-96 survey were professionals (Bauer, 2001:151). •57% of Antarctica overflight tourists in a 1994-95 survey were professionals (Bauer, 2001:170). •23% of ecotourists on an Australian whale-watching trip were professional/ technical (Muloin:98:206).
Students	•34% of participants at a Canadian whale researching project, CERF, were students (Megill, 2001). •15% of global Earthwatch participants in 2002 were students (Earthwatch Institute, 2003b). •14% of participants on 2 orang-utan Earthwatch projects in 1992 were students (Russell, 1995:154).	•55% of participants on a volunteer tourism program in Thailand (long term) were students or had just finished being a student (Broad, 2001:205-6). •15% of volunteers with the Australian Threatened Bird Network were students (Weston et al, 2004:209). • 55% of participants on a volunteer tourism program in Thailand (long term) were students or recent graduates (Broad, 2001:256).	•26% of ecotourists in Taiwan were students (Tao, Eagles and Smith, 2004:157).
Retirees	•2% of participants at a Canadian whale researching project, CERF, were retirees (Megill, 2001). •14% of global Earthwatch participants in 2002 were retirees (Earthwatch Institute, 2003b). •31% of all Landscope Expeditions participants from 1992-2003 were retirees (Appendix 11).	•17% of volunteers with the Australian Threatened Bird Network were retirees (Weston et al, 2004:209).	•40% of visitors by ship to Antarctica in a 1994-96 survey were retired (Bauer, 2001:151). •40% of Antarctica overflight tourists in a 1994-95 survey were retired (Bauer, 2001:170).

	PERT	Volunteers	Ecotourists
Higher income		•Those in paid employment were more likely to be volunteers in Australia (ABS, 2001a:2) and the UK (Institute for Volunteering Research, 1997). •The unemployed have the highest volunteer rate in environmental and animal care (3.1%) for the total USA population (Bureau of Labor Statistics, 2003). •Over 30% of birdwatchers surveyed in Canada had an income of over $60,000 and respondents were considered to have a high income level (McFarlane, 1994:365).	•The average income of ecotourists in a Canadian study was CDN$60,000 (Fennell and Smale in Fennell 1999:58). •The mean household income for ecotourists in a Canadian study for 1989-1990 was $64,000, much higher than for the Canadian population or other Canadian travellers (Eagles and Cascagnette, 1995:26). •More specialised wildlife viewers have a higher household income than intermediary or novice wildlife viewers in Montana (Martin, 1997:7).
Single, widowed or divorced	•67% of participants in an Australian-based Earthwatch sample were single, widowed or divorced (Weiler and Richins, 1995:33).	•Single, never married have the highest volunteer rate in environmental and animal care (2.6%) for the total USA population (Bureau of Labor Statistics, 2003). •None of the participants on a volunteer tourism program in Thailand had children and most were single (Broad, 2001:205-6). •Australians aged 65-74 years who volunteer are more likely to be married than the same aged non-volunteers (Warburton et al, 2001:589). •Marital status was not significant in determining volunteering in a USA study but school-aged children increased the likelihood (Rooney, Steinberg and Schervish, 2004:645).	•73% of Australian dolphin ecotourists were in a family group (Mayes, Dyer and Richins, 2004:47). •Young singles (11%) in Canada had the highest rate of participation in a hands-on learning experience on vacation in the last 2 years and the second highest rate (10%) in the USA after mature families (11%) (Lang Research, 2001). •30% of visitors by ship to Antarctica in a 1994-96 survey were travelling alone (Bauer, 2001:151). •2.7% of ecotourists on an Australian whale-watching trip were alone (Muloin, 1998:206).
Overseas	•A Canadian whale researching group, CERF, stated 22% of participants were not Canadian (Megill, 2001). •4% of all Landscope Expeditions participants from 1992-2003 were from overseas (Appendix 11).		•21% of Australian dolphin ecotourists were from overseas (Mayes, Dyer and Richins, 2004:47). •60% of Australian dolphin swim ecotourists were from overseas (Mayes and Richins, 2003:488).

Appendix 2
Data Concerning the Reasons People Volunteer

The reasons people choose to volunteer have been investigated and the results of several major international volunteering surveys are listed below. The results vary, and this may be due to cultural differences or due to the way the survey was structured and administered.

The 1999 United State-based Sixth Biennial Giving and Volunteering Survey (Independent Sector, 1999) asked about 1998 volunteering activities. Multiple responses were possible and the results stated the four most important reasons people volunteer were:

- compassion for those in need 86%;
- interest in the work or activity 72%;
- to gain a new perspective on things 70%; and
- the importance of the activity to people the volunteer respected 63%.

The 1997 National Survey of Volunteering in the United Kingdom (Institute for Volunteering Research, 1997) asked about the key personal benefits from volunteering. The results were:

- the enjoyment of the activity;
- the satisfaction of seeing results;
- meeting people; and
- a sense of personal achievement.

The 2000 Canadian National Survey of Giving, Volunteering and Participating (Hall, McKeown & Roberts, 2001) found the main reasons people volunteered were:

- belief in the cause, 95%;
- to put their skills and experience to use, 81%;
- they had been personally affected by the organisation they were now helping, 69%;
- the opportunity to explore their strengths, 57%; and
- increased job opportunities, 23%.

The Australian Bureau of Statistics conducted a survey in 2000 (Australian Bureau of Statistics, 2001a:20) and determined the reasons for volunteering were:

- to help others or the community, 47%;
- personal satisfaction, 43%
- personal/ family involvement, 31%;
- to do something worthwhile, 30%;
- for social contact, 18%; and
- to use own skills and experience, 13%.

Young people particularly viewed volunteering as a way to gain work experience, skills and qualifications (Institute for Volunteering Research, 1997). Sixty-two per cent of unemployed volunteers in Canada, regarded volunteering as a way to improve their job prospects (Hall et al., 2001) and 'a growing proportion of people are volunteering explicitly to increase their employability, and often succeed in acquiring new skills and the self-confidence they need to find new work (Gay, 1998). Hall, McKeown et al. (2001) found youths (15-24 years old) had distinctly different motivations for volunteering to the general volunteering population and the three most significant motivators were:

- a chance to improve job prospects;
- the opportunity to explore their own strengths; and
- because their friends had volunteered.

A different emphasis was placed on reasons for volunteering by 18-24 year olds compared with the total population in an Australian survey conducted in 2000 (Australian Bureau of Statistics, 2001a:20). The key reasons were:

- personal satisfaction, 40%
- to help others or the community, 40%;
- to do something worthwhile, 21%;
- to gain work experience, 17%;
- personal/ family involvement, 16%; and
- to learn new skills, 13%.

Gaining jobs skills and qualifications are less likely to be important in older populations. A Canadian study looking at the motivations of older people (Volunteer Canada & Canadian Centre for Philanthropy, 2000:6) found some variations (Table A2.1) in motivation by age groups.

Table A2.1 Motivations for volunteering of older Canadians

	Per cent response of 45-54 years old	Per cent response of 55-64 years old	Per cent response of 65+ years
Belief in cause	97	98	97
Use of skills/experience	76	75	71
Personally affected	70	70	66
Explore own strengths	50	46	37
Fulfil religious obligations	32	40	49
Friends volunteer	20	25	31
Increase job skills	12	9	3

The United Kingdom-based Institute for Volunteering Research examined the reasons older people (aged 50 years and older) volunteered and surveyed 400 volunteers. The results (Institute for Volunteering Research, no date [b]) revealed the four most common reasons for volunteering with an organisation were:

- to put their skills to good use;
- because the organisation had a good reputation;
- because the organisation was known to be short of volunteers; and
- because someone asked.

An Australian survey conducted in 2000 (Australian Bureau of Statistics, 2001a:20) found the emphasis placed on reasons for volunteering by 65 year olds and older was different to that of the total population. The key reasons were:

- to help others or the community, 54%;
- personal satisfaction, 51%
- to do something worthwhile, 35%;
- social contact, 28%; and
- to be active, 19%.

Australian Bureau of Statistics. 2001a. ***Voluntary Work, Australia 2000, ABS Catalogue No. 4441.0***: 1-18. Canberra: Australian Bureau of Statistics.

Gay, P. 1998. Volunteering for Employability. ***Voluntary Action***, 1(1).

Hall, M., McKeown, L. & Roberts, K. 2001. ***Caring Canadians, Involving Canadians. Highlights from the 2000 National Survey of Giving, Volunteering and Participating***. Ottawa: Ministry of Industry.

Institute for Volunteering Research. 1997. ***The National Survey of Volunteering in the United Kingdom***. London: Institute for Volunteering Research.

Institute for Volunteering Research. no date [b]. ***Potential of a Lifetime - Research Summary: Study of Older Volunteers in 25 Organisations.*** www.ivr.org.uk/potential.htm 1 November 2004.

Volunteer Canada & Canadian Centre for Philanthropy. 2000. ***Canada, Volunteering a Booming Trend***: 20: Volunteer Canada. http://www.volunteer.ca/volcan/eng/content/older-adults/booming.php?display=2,0,8.

Appendix 3
Positive Benefits Identified During the First Stage of the Research

The listed reasons were summarised from textual material and discussions during the first stage of the research.

Agency - Positives

- Funding.
- Communication of importance of species and issues to broader public and awareness-raising.
- Raise the public profile of the place – local, domestic or national, or international and raising community awareness of the location to help site preservation.
- Educate people about the purpose of the scientific program and why it is important – local, students, national, international. This helps gather support to save an area.
- Enjoyment of having different faces and people on a long-term research project as volunteers are usually intelligent, enthusiastic and committed.
- Help create environmental education of locals.
- Change attitudes and behaviours.
- Provide employment to locals and an economic boost to the area.
- Although volunteer tourists are small in number they are high spending, committed quality tourists and preferable to mass or lower standard in moral, socio-economic class. Destinations want affluent, well-educated and well-behaved tourists.
- Supplement and diversify the income in marginal areas where mass tourism doesn't or can't exist.
- Allow some tourism in areas that can't support mass tourism.
- Increase global understanding.
- Provide opportunities for people to improve their lives and lives of others.
- Marketing – provide a new niche, increase membership.
- Obtain a different range of skills in team.
- People-centred approach to finding solutions to practical environmental issues.
- Increase understanding of the goals of the organisation.
- Increase understanding of the role of science.
- Improve political push for a subject or the agency.
- Social development – improve skills and abilities of public.
- Stewardship.
- Product enhancement for visitors.
- Change the view that tourism has a negative impact.
- Link science and industry at the grassroots.
- Widen societal networks.
- Get information across a large number of sites.
- Improve cooperation across a wide number of groups to help create more efficient management.

Scientists - Positives

Reasons already listed above were not duplicated here.

- Need research funds.
- Involvement with volunteers helps attain other grants as it looks good on curricula vitae.
- Can help agency achieve its broader goals such as environmental education.
- Gain a sense of satisfaction.
- Labour needs as non-specialists who can be quickly trained to do specific tasks are useful when large amounts of data are needed for statistical validity, particularly over a short time frame or when labour requirements are high.
- Ability to do long-term work without funding restrictions.
- Avoids the political problems that some grants have, or are perceived to have.
- Less bureaucracy than some grants as unlike government grants, private funding does not entail extensive paperwork or a slew of regulations.

Volunteers - Positives

- Learn about the world, gain a new perspective on the world.
- Learn about self.
- Immersion in new culture and language.
- Experience life as an outsider.
- See and hear alternative ways of thinking and being.
- Overcome physical challenges, perseverance.
- Greater authenticity.
- Improve skills and experiences.
- Emotive impacts.
- Altruism – counter societal breakdowns.
- Gain respect for the lives of the less fortunate.
- Break down barriers.
- See where donated money and time goes.
- Opportunity to be a student/child again – to try, to fail, to learn, to succeed, renewed permission to be children.
- Use imagination.
- Relaxation and enjoyment.
- Sightseeing element, see the exotic.
- Country living – escapism from real life, nothing to do with normal life.
- See a task completed even if small, sense of accomplishment, gain pride.
- Feel a part of something.
- Fulfilling.
- Meet other enthusiastic like-minded people.
- Have a shared sense of purpose.
- Changes people – introspective.
- Improve self-esteem.
- Gain respect from someone they care for.
- Improve reserves of goodwill.
- Improve employment chances.
- Friendships.
- Acceptance by others.
- Gain confidence and strength.
- Improve health.
- Can be fun.
- Adventure and exploration.

Appendix 4
Sample of the Information Sheet for Members of Field Crews

This letter was sent out by Earthwatch Australia, by email, to members of their research teams. Earthwatch added their own cover note requesting approval to release researcher contact details to me.

To Earthwatch PIs,
I am a PhD candidate in Environmental Studies, University of Tasmania looking at the range of positive outcomes surrounding trips where participants join an environmental field research trip and help financially support the project. My PhD is part time (as I am full time working) and one of my case studies is Earthwatch Australia. Having discussed the research project with the Melbourne office, I am in the process of surveying all participants for 2003. My aim is to look at the perspectives of the three key stakeholders, the agency, the scientists/researchers and the participants involved in the trips.

As the points of view of scientists/ members of the research team are an important component of my research I am interested in interviewing all members of the teams involved in Australian-based Earthwatch projects in 2003. I know some people may have been the Principal Investigators who were involved in the design and structure of the research and others may have only joined for one trip or been assistants. As I suspect there will be differences in the personal goals and outcomes between these people I would like to interview all team members if I can.

I appreciate you are very busy and I have tried to keep my questions brief. My research involves a semi-structured telephone interview that usually takes around 35-45 minutes and a follow-up tabular email survey that takes around 5 minutes. I prefer to arrange via email a suitable time for me to telephone you so I don't interrupt you part way through another task and I appreciate you may be away travelling/ in the field etc and it could be some time before a suitable time is available. My interview covers several areas including your background/prior experience in using volunteers, your goals/ reasons for

being involved in the trip (note - there is no need to reiterate anything in the expedition brief in terms of scientific goals etc, but your own scientific goals may only be a sub-set of the broader program) and aspects about using volunteers.

As only small numbers of people are involved in this type of work, your opinions are important and I appreciate your help. The research follows the usual University guidelines. Participation is voluntary and the information obtained from this surveying will only be used in an aggregated form and no individual responses will be discernable. Aggregated data will be returned to the Earthwatch Australia office and if you wish to also receive a copy of the results, this can be arranged.

If you would like further information or have any queries, please contact me and thank you for your help.

Regards

Claire Ellis
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Appendix 5
Telephone Survey for Members of the Field Crews

Semi-structured interviewing was conducted via the telephone. The types of questions are outlined here but the order and style of questioning altered from person-to-person with the flow of the conversation. Each person had been contacted in advance, usually by email to introduce the research, check again that the participant was happy consenting to an interview and to arrange a suitable time.

History of how the trip developed and your involvement in it.
Why you decided to use volunteers?
What was your role in the trip?
How did you get involved with this trip?

The next set of questions are determining your past experience with volunteers and with this trip.
Have you run or helped run this trip before? If yes, list.
Have you run or helped run other similar trips before using volunteers? Please list.
Had you organised or helped manage volunteers in other ways prior to this (such as through informal trips, on day trips, with local communities)? If yes, please explain briefly.
Have you ever worked as a volunteer yourself?

The next set of questions ask about your goals as a scientist or researcher and your personal goals, as well as your perceptions of other goals such as agency goals that might be relevant.
I have the expedition notes here....do these outline the scientific goals of this trip?
Were there any variations?
Were these your goals?
Were you working on each of the goals or only undertaking a section of the work outlined?
To what extent you think each goal was achieved?

Did you have any personal goals or reasons for wanting to join the trip? If yes, please list.
To what extent you think you achieved each of these?

What do you think are the key reasons the agency is involved in running these trips?
Do you think each goal was/is being achieved.

Were there broader reasons or other reasons for running the trip we haven't covered yet?

The next section talks about positive and negative aspects of having these volunteers on this trip. This is comparing the trip you took with volunteers compared to the same type of trip with no volunteers being present.
What were the positive aspects associated with having these volunteers involved on this trip?
What were the negative aspects associated with having these volunteers involved on this trip?

Differences between types of volunteers
Are these volunteers similar /same to using other types of volunteers?
How?

Had some volunteers done trips like these before?
Were they of more use /could be utilised in other ways?

Other questions
Would you run or help run another trip like this again, or recommend it to colleagues?

Anything else we haven't covered that you would like to add?

Appendix 6
Email Survey for Members of the Field Crews

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Name of trip: Earthwatch 2003.

Thanks for your help in answering the questions we discussed over telephone. This is a short extension of those questions that should only take around 5 minutes to fill in.

Please answer the survey as an individual from your point of view and not as a group.

Please return via email to claire.ellis@utas.edu.au or if you would prefer to print it off, fill out a hard copy and return via post, please send to the address at the top of this page.

The survey is voluntary and all information will be aggregated. No single person's answers will be identifiable either in published material or by the agency you worked with.

1. Please indicate with a cross (x) the extent the listed reasons were relevant in your decision to use EARTHWATCH volunteers (or be part of a trip using EARTHWATCH volunteers) for the EARTHWATCH trips you undertook in 2003.

Reasons	Very relevant	Relevant	Partly relevant	No really relevant	Not relevant
Raise awareness of issues					
Raise awareness of species					
Raise awareness of location					
Asked to by agency/told to by employer					
Needed the extra labour/hands					
Unable to get funding through alternative means					
This form of funding had less bureaucracy than alternatives					
Wanted more control over funding than a grant process allows					
Program funding needed a longer time frame than grants allow					
To help support local community					
Enthusiastic new faces to work with					
To change attitudes and behaviour of public					
Gain the varied skills of volunteers					
Social development – increase skills and abilities of public					
To increase the understanding of role and activities of agency					
Increase understanding of role of science					
Improve political push for subject					
Other, please list					

2. Please indicate with a cross (x) to what extent you were satisfied with the outcomes.

Reasons	Fully satisfied	Mostly satisfied	Partly satisfied	Hardly satisfied	Not satisfied	Not Relevant
Raise awareness of issues						
Raise awareness of species						
Raise awareness of location						
Needed the extra labour/hands						
Unable to get funding through alternative means						
This form of funding had less bureaucracy than alternatives						
Wanted more control over funding than grant process allows						
Program funding needed a longer time frame than grants allow						
To help support local community						
Enthusiastic new faces to work with						
To change attitudes and behaviour of public						
Gain the varied skills of volunteers						
Social development – increase skills and abilities of public						
To increase the understanding of role and activities of agency						
Increase understanding of role of science						
Improve political push for subject						
Other, please list						

3. How do you view the data collected by the volunteers from this trip?

	Major problems	Minor problems	No Problems	Not relevant
Validity				
Replicability				
Quantity obtained				
Other, please list				

Please comment if you wish.

.....

.....

.....

The final section of this survey consists of questions of a personal nature. By answering them you are helping answer some important research questions and these answers are strictly confidential.

4. I am in the following age group. Please indicate with a cross (x):

Under 25 years old.....
25-34.....
35-44.....
45-54.....
55-64.....
65 or older.....

5. Please indicate whether you are male or female with a cross (x):

Male.....
Female.....

6. What is your highest level of education? Please indicate with a cross (x).

High school.....
Part or completed university undergraduate work.....
Some or partial completion of post-graduate work.....
Completed Masters or Doctorate.....

7. What year were the above qualifications completed in?

.....

Thank you for your time and commitment in helping with this research.

UNIVERSITY OF TASMANIA

School of Geography & Environmental Studies

Appendix 7
Sample of the Participant Information Sheet for the First Survey

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SURVEY ON PARTICIPATORY ENVIRONMENTAL RESEARCH.

This survey has been sent to you as you have recently undertaken an environmental research oriented trip with the Earthwatch Institute. The survey is a part of a PhD research program being conducted through the University of Tasmania, Australia. A number of trips have been selected to help improve our understanding of the mechanisms by which short-term volunteers participate in, and contribute to, the outcomes of projects such as the one you have already undertaken. This research is also designed to help determine the range of positive outcomes from these types of trips to further refine and develop future trips and improve our natural resource management choices.

The information obtained from this survey will only be used in an aggregated form and no individual responses will be discernable. All responses will be treated confidentially. This aggregated data from a number of trips will also be returned to Earthwatch Institute to help them.

I understand you are very busy and I have tried to keep my questions to a minimum accordingly. Participation is voluntary but your responses will greatly improve the quality of this research.

Please return all survey forms directly to me in the enclosed stamped self-addressed envelope. If you are an overseas participant with email this letter and survey form may have been emailed to you (to save time, trees and postage). Please fill in the form and return via email. If you cannot read the attachments or would prefer to receive a hard copy via post, please email me and I will post one. Names are not included in the data collation process and are simply to help with the logistics of surveying.

Please contact me if you have any queries and thank you for your time and commitment in helping with this research.

Regards

Claire Ellis

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Australi
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Appendix 8
Sample of the Participant First Survey

Name of trip: (handwritten in).....

Thank you for participating in this survey. It is part of a broader set of research discussed in the attached cover letter that will help improve future trips like this. Please answer all the questions clearly and as fully as possible and return the survey in the stamped addressed envelope. This should take around 10-15 minutes. If you travelled with others, please fill in your own answers and complete the form as an individual. If you wish to write more than there is room for, please do so. All information will be aggregated and no single person's answers will be identifiable either in published material or by the agency you travelled with.

1. Have you previously taken a similar trip(s) with this organisation? Please place a cross (x) after the appropriate category.

No..... once.... 2-5 times.... 6 to 10 times.... more than 10 times....

If you answered once or more, please list the most recent trips below. If no, go to Q2.

Trip	Where	Year

2. Have you previously participated in a similar trip with another organisation (where you have traveled to help with an environmental research project)? Please place a cross (x) after the appropriate category.

No..... once.... 2-5 times.... 6 to 10 times.... more than 10 times....

If you answered once or more, please list the most recent trips below. If no, go to Q3.

Trip	Organisation	Where	Year

3. Have you previously taken a trip to help with other types of volunteer work such as conservation work, track maintenance, habitat restoration, archaeology, community development or something similar? Please place a cross (x) after the appropriate category.

No..... once.... 2-5 times.... 6 to 10 times.... more than 10 times....

If you answered once or more, please list the most recent trips below. If no, go to Q4.

Trip	Organization	Where	Year

4a. Please indicate for the following factors how important they were to you in selecting this trip. Please indicate with a cross (x).

Reasons for joining	Very important	Quite important	Relevant	Not greatly considered	Not important
To have fun					
To learn about the area					
To learn about the trip's research subject					
To relax					
To join friends or family					
To see new things					
For a sense of accomplishment					
To help the scientists get the data					
To use your skills and help others					
To meet people with similar interests					
To have a different holiday					
To help the organisation					
To feel closer to nature					
To get work experience					
Other reasons.....					

4b. Please indicate with a cross (x) to what extent you were satisfied with the outcomes for each of these reasons now the trip is over.

Reasons for joining	Fully satisfied	Mostly satisfied	Partly satisfied	Hardly satisfied	Not satisfied	Not relevant
To have fun						
To learn about the area						
To learn about the trip's research subject						
To relax						
To join friends or family						
To see new things						
For a sense of accomplishment						
To help the scientists get the data						
To use your skills and help others						
To meet people with similar interests						
To have a different holiday						
To help the organisation						
To feel closer to nature						
To get work experience						
Other reasons.....						

5. Question 4a asked about your reasons for joining the trip. Now the trip is over, do you think you gained other benefits from the trip? Please place a cross (x) after the appropriate category

yes ..... no.....

If yes, please list. If no, go to question 6.

.....
.....
.....
.....
.....

6. What were the highlights of your trip?

.....
.....
.....
.....
.....

7. Are there any changes you would make to improve the trip? Please list any ideas.

.....
.....
.....
.....
.....

8. Overall, how much would you say you have discovered or learnt during your trip?
Please place a cross (x) after the appropriate level.

Not a lot..... 1..... 2..... 3..... 4..... 5..... 6..... 7..... A lot.....

If you answered 'not a lot' please go to Q 10.

9. Do you think you will (or already have) use the skills and knowledge you gained on this trip elsewhere? Please place a cross (x) after the appropriate category

yes ..... no.....

If yes, please comment. If no, please go to question 10.

.....
.....
.....
.....

10a. Before the trip, where would you have placed yourself on the following scale? Please place a cross (x) after the appropriate category.

Not an environmentalist..... 1..... 2..... 3..... 4..... 5..... 6..... 7..... A strong environmentalist.....

10b. Now the trip is over, where would you place yourself on the same scale? Please place a cross (x) after the appropriate category

Not an environmentalist..... 1..... 2..... 3..... 4..... 5..... 6..... 7..... A strong environmentalist.....

11. Would you like to join another trip like this again? Please place a cross (x) after the appropriate answer.

Yes... No.... Maybe..... If no, go to Q12.

If yes, would you:
11a) do a trip focusing on the same subject?
Yes..... No..... Maybe.....

11b) do a trip focusing on the same location or area?
Yes..... No..... Maybe.....

11c) join with the same agency?
Yes..... No..... Maybe.....

11d) join with the same scientist/s?
Yes..... No..... Maybe.....

Please comment if you wish.
.....
.....
.....

To help us understand the backgrounds of participants, there are a few more questions. Please answer these based on your activities before you joined this trip, not on any activities you may have done after returning or are considering doing shortly.

12. Do you belong to any conservation or environmental groups? If so, please list. If no, go to Q13..
.....
.....
.....

13. Are you a member of any special interest nature or outdoor groups (such as a bird association, local hiking group or scuba club)? If so, please list. If no, go to Q14.

.....

.....

.....

14. How often in the last couple of years have you participated in the following? Please indicate with a cross (x).

	Never	Seldom	Sometimes	Frequently	Always
Local environmental conservation work					
Buying environmentally-friendly or recycled products					
Making donations to environmental organisation/s					
Conserving water					
Taking public transport whenever possible or carpooling					
Engaging in minimal impact practices in natural areas					
Writing to politicians, signing petitions or attending meetings regarding environmental issues					
Watching environmental shows or reading environmental literature					

15. Are there other environmentally friendly activities you undertake? Please list

.....

.....

.....

The next question is about your future activities.

16. Has participation in this trip changed (or going to change) the frequency of your participation in any of the activities listed in Q14 or 15? If yes, please explain which activities you may change and how.

.....

.....

.....

.....

The final section of this survey consists of questions of a personal nature. By answering them you are helping answer some important research questions and these answers are strictly confidential.

17. I am in the following age group. Please indicate with a cross (x):
    Under 25 years old.....
    25-34.....
    35-44.....
    45-54.....
    55-64.....
    65 or older.....

18. Please indicate whether you are male or female with a cross (x):
    Male.....
    Female.....

19. Home post-code .....Country (if outside Australia)
    .....

20. Education level. Please indicate with a cross (x):
    Up to and including grade 12 .....
    Technical studies .....
    Other advanced studies, diploma or partial university studies.....
    Completed university degree or higher .....

21. Your usual occupation. (If retired, please indicate this with occupation prior to retirement e.g. retired engineer).
.....

Thank you for your time and commitment in helping with this research. This is the end of the survey but please read the next page.

FOLLOW-UP SURVEY

I would like to invite you to participate in a follow-up survey in around six months time. The purpose of the follow-up is to determine what the longer term or longer lasting outcomes of the trip may be. This is an important part of the research.

The follow-up survey will be a short questionnaire that I will email to you (or it can sent by post if preferred with a reply paid envelope). It will take only about five minutes to complete. If you are happy to be part of the follow-up survey, please complete the following details:

Title (Mr, Mrs, etc) .....

Family name .....

Given name/s .....

Postal address .....

Suburb/Town/City.....

State .....

Postcode .....

Country .....

If you would prefer to be contacted via email, please give your email address

.....

There may be a number on this survey. This number will also be placed on the follow-up survey as a way of determining which individuals have completed both surveys. This is strictly for logistical and statistical purposes and there will be no matching of names with surveys.

Your name and address will not be used for any other purpose nor will be given to any other person or organization.

Thank you again for your assistance.

Claire Ellis

UNIVERSITY OF TASMANIA
School of Geography & Environmental Studies

Appendix 9
Sample of the Participant Information Sheet for the Second Survey

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SURVEY ON PARTICIPATORY ENVIRONMENTAL RESEARCH.
This survey has been sent to you as you undertook an environmental research-oriented trip with Landscope Expeditions and subsequently filled in a survey that was part of a PhD research program being conducted through the University of Tasmania, Australia. In that survey you indicated you would be happy to participate in another survey that is the second and final part of this research. This second survey is much shorter and is attached.

The research is designed to help determine the range of positive outcomes from the types of trips where short-term volunteers participate in, and contribute to, environmental field research projects such as you undertook. As some of these outcomes may be longer term or change over time, this second survey is examining your views many months after you have taken the trip. I had a really good response to the first phase and after this set of surveying is completed I will write up results and send a copy to Landscope Expeditions, so if you are interested to read the results they will be available.

The information obtained from this survey will only be used in an aggregated form and no individual responses will be discernable. All responses will be treated confidentially. This aggregated data from a number of trips will also be returned to Landscope Expeditions to help them further improve their own trips.

I understand you are very busy and so I have tried to keep my questions to a minimum. Participation is voluntary but your responses will greatly improve the quality of this research.

Please return all survey forms directly to me via email or if you received a hard copy, in the enclosed envelope. Names are not included in the data collation process and are only used to help with the logistics of surveying.

Please contact me if you have any queries and thank you for your time and commitment in helping with this research.

Regards

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Appendix 10
Sample of the Second Survey Sent to Participants, Email Version.

Name of trip: ...(handwritten in) ... EARTHWATCH AUSTRALIA
Some months ago, you participated in a trip with EARTHWATCH and subsequently took part in the first stage of this research by filling in a survey form. This survey has been sent because you indicated you would be happy to help again and take part in our second and final stage of research. The questions are similar to those in the first survey but this survey aims to understand your views of the trip now that some months have passed.
It is part of a broader set of research discussed in the attached cover letter that will help improve future field research oriented trips. Please answer all the questions clearly and as fully as possible. This should take around 10 minutes, then return the survey via email. If you travelled with others, please fill in your own answers and complete the form as an individual. If you wish to write more than there is room for, please do so. All information will be aggregated and no single person's answers will be identifiable either in published material or by the agency you travelled with. If you would prefer a hard copy, please contact me and I will post you one together with a stamped return envelope.

1. How many holidays (of one week or longer in duration) do you usually take per year? Please place a cross (x) in the appropriate box.

0-1	
2-3	
4-5	
More than 5	

ALL THE FOLLOWING QUESTIONS RELATE TO YOUR VIEWS WITH RESPECT TO THE EATHWATCH TRIP YOU UNDERTOOK.

2. Please place a cross (x) in the appropriate box, for each of the following statements.
Would you like to:

	Yes	No	Maybe
Do another research oriented field trip?			
Do another similar trip focusing on the same subject?			
Do another similar trip but with a different subject?			
Do another similar trip focusing on the same location or area?			
Do another similar trip but in a new area?			
Join another similar trip with the same agency?			
Take a similar trip but with another agency?			
Join another similar trip with the same scientist/s?			
Take a similar trip with different scientists?			

If you answered 'no' to all sections of question 2, please go to question 5.

3. If you answered 'yes' or 'maybe' to any part of question 2, how soon would you realistically be likely to undertake the trip? Place a cross (x) in the appropriate box.

Have already	
In next 6 months	
In next 12 months	
In next 2-3 years	
Some time beyond 3 years.	

4. If you answered 'yes' or 'maybe' to any part of question 2, what are your main reasons for wanting to undertake another field research oriented trip?

.....
.....
.....
.....
.....
.....

5. Thinking back about the reasons you took the field research trip and the experiences you had, what aspects of the trip are now the most important to you?

.....
.....
.....
.....
.....
.....

6. Now that the trip has been over for some time, overall, how much would you say you discovered or learnt during your trip?
Please place a cross (x) after the appropriate level.

Not a lot..... 1..... 2..... 3..... 4..... 5..... 6..... 7..... A lot.....

7. Please list any specific skills or knowledge you think you gained from participating in this trip.

.....
.....
.....
.....
.....

8. Have you already used any of the skills or knowledge you gained on this trip elsewhere?
Please place a cross (x) after the appropriate category.
yes .....no.....
If yes, please comment.

.....
.....
.....

9. Some people see these trips as a different type of holiday but others view it more as volunteering. How do you see your involvement in the trip? Please place a cross (x) after the appropriate level.
All holiday .....
Mostly holiday but some volunteering.....
About half holiday, half volunteering.....
Mostly volunteering but some holiday .....
All volunteering .....

10. Where would you place yourself on the following scale?
Please place a cross (x) after the appropriate category.

Not an environmentalist..... 1..... 2..... 3..... 4..... 5..... 6..... 7..... A strong environmentalist.....

11. Please indicate with a cross (x) whether participation in the trip changed any of the following for you:

	No Change	More	Less
Participation in local environmental conservation work.			
Buying environmentally-friendly or recycled products.			
Making donations to environmental organization/s.			
Conserving water.			
Taking public transport whenever possible or carpooling.			
Engaging in minimal impact practices in natural areas.			
Writing to politicians, signing petitions or attending meetings regarding environmental issues.			
Watching environmental shows or reading environmental literature.			
Participation in local volunteering (of any type).			
Membership of outdoor or special interest nature groups.			
Membership of environmental groups.			

12. Are there any other activities you participate in that have been influenced by taking part in the trip? Please list/describe
.....
.....
.....

Your name and address will not be used for any other purpose nor will be given to any other person or organisation.
Thank you again for your assistance.
Claire Ellis

Appendix 11
Reminder, Hand Written Note, Used for the First and Second Surveys.

The following comments were handwritten on the first information sheet (Appendix 7) or second information sheet (Appendix 9), as appropriate, and sent with another copy of the first or second surveys. Minor variations existed depending on whether the survey form (second survey only) had been posted or emailed to the participant.

You may have already filled this in and returned it recently. Please ignore this reminder if you have. If not, I would appreciate your help. This survey is not designed as a post-trip evaluation (and you may have already completed one of these) but asks a broader set of questions. Together with other research it will increase our understanding of these types of trips.
Thanks Claire

Appendix 12
List of Global PERT Organistions, August - December 2001

Adriatic Dolphin Project
African Conservation Trust
Australian Koala Foundation
Biosphere Expeditions
British Trust for Conservation Volunteers
Caretta Research Project
Caribbean Conservation Corp
Conservation, Education, Diving, Awareness and Marine Research (CEDAM)
Coastal Ecosystems Research Foundation (CERF)
Chelon
Discovery Initiatives
Earthwatch
Ecoswiss
Ecovolunteers
Elderhostel
Fondo per la Terra
International Otter Survival Foundation
Intersea Research
Involvement Volunteers Association
James Scheerer Research Charters
Kings Park Expeditions
Landscope Expeditions
Mingan Island Cetacean Study (MICS)
Naturewise, Australian Conservation Volunteers (now CVA)
New York Botanic Gardens
Oceania
Oceanic Society Expeditions
Oceanographic Expeditions
Odyssey
One World Workforce
Pacific Whale Foundation
Peoples Trust for Endangered Species
REEF
Sierra Club
South African White Shark Research Institute
Tethys Research Institute
Undersea Explorer
University Research Expedition Programs (UREP)
Wilderness Travel

Appendix 13

Landscope Expeditions – Participant Profiles, 1992-2003

Introduction

To provide a broader understanding of the participants on Landscope Expeditions trips and to place the results of the research on the six surveyed trips (see Chapter 8) in context, all available data on past Landscope Expeditions participants were examined. Agency files contained mostly socio-demographic data on each participant. These were aggregated and compared with statistics for the Australian population (as most participants originated from within Australia) and with other researchers findings from the fields of ecotourism and environmental volunteering.

Method

Several visits to CALM's Perth head office were undertaken between 2000 and 2003 to interview staff, gain an understanding of the agency goals and operations, and collate as much secondary data as possible. A booking sheet for each participant had been kept chronologically in a folder, from the inception of Landscope Expeditions in 1992, to the period the research was undertaken, March 2003. This folder contained data such as name, contact address, gender, date of birth, occupation, education level and trips booked. The data were computerised into an Excel spreadsheet for analysis. Tallied data concerning participants per trip, and per year, were checked with other totals kept by CALM staff to ensure completeness. The computerisation of this information allowed the number of participants per year, the profile of all participants, the profiles per year, and the profiles of repeat versus once–only participants to be analysed. Trip reports also contained a list of all participants. These were used to cross-check the database created from the booking sheet. Unfortunately a complete set of trip reports were not available and the format had changed a little over time. Despite this, the reports were a useful form of triangulation and provided a data source for comparison of individual trip profiles. Data from 26 trips from 1997 to 2001 were collated and compared with the booking sheets.

Data were collated on an annual basis. Data collation finished in March 2003, and at that stage, only two trips had been run during 2003. Because of this, 2003 data are not necessarily comparable with data from earlier years.

Limitations

The use of secondary data to examine participant profiles for Landscope Expeditions over time was limited by the nature of the data and the purpose for which the data were collected. In this case, validity and reliability were not considered an issue. Some data such as 'occupation' were problematic. Occupation was asked as an open-ended question and respondents were asked to indicate if they were retired. Answers varied widely and accurate coding was difficult, except at the very broad level. Data on most participants were complete, but there were blanks for some participants. Blanks were coded as 'unknown'.

Results - participant profiles

Data on all people who had undertaken a trip were collected. The term 'all participants' is used in the following analysis to refer to a statistic where each participant on a trip is included. For instance, if a person had been on three trips between 1992 and 2003, they would be included three times (n=649). The term 'all people' is used to indicate a statistic that only includes a participant's details once, even if they had undertaken three trips (n=435). The term 'repeaters' is used for anyone who has been on two or more trips (n=110) as opposed to 'first-timers' who have only been on one trip (n= 325). The number of participants per year, and trips per year, are shown in Table A13.1. The highest number of participants per year was 100 people in 2002.

Table A13.2, indicates that of the 649 participants, 281 were male (43%) and 368 female (57%). For eight of the 12 years, the number of female participants exceeded males. For all people who have participated in a Landscope Expedition trip (n=435), 203 (47%) were male and 232 (53%) were female.

Table A13.1 Landscope Expeditions, trips and participants per year, 1992-2003

Year	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
No. of trips		4	5	4	7	6	5	7	5(a)	6	9	2(b)
No. of participants	19	46	81	53	64	67	40	50	46	71	100	12

(a) Trips in 2000 were affected by several factors that caused fewer trips than usual to be run. The Mitchell Plateau flooded a week before a trip was due to start, causing it to be cancelled. Three other trips were cancelled due to poor bookings. This was attributed by staff to the Sydney Olympics and the introduction of the Goods and Services Tax.
(b) data collation stopped in March 2003.

Table A13.2 Landscope Expeditions, gender of participants, 1992-2003

Trip year	Male	Female	Total	% of males	% of females
1992	10	9	19	53	47
1993	19	27	46	41	59
1994	33	48	81	41	59
1995	18	35	53	34	66
1996	23	41	64	36	64
1997	34	33	67	51	49
1998	15	25	40	38	63
1999	21	29	50	42	58
2000	25	21	46	54	46
2001	33	38	71	46	54
2002	42	58	100	42	58
2003	8	4	12	67	33
Total, all years	281	368	649	43	57

Table A13.3 indicates 39% of all participants, (n=649), were aged 55 years or older, and 68% were 45 years or older. This profile fluctuated over time. The lowest proportions of participants, aged 55 years or older, were from 1999-2003. 1998 was the highest year with 55% of all participants being 55 years or older.

Landscope Expeditions trips required all participants to be at least 13 years old so it was not possible for young families to participate. The impact of this in the participant demographics is evident. No trend was discernable for the level of participation of people below 35 years of age. The greatest proportion of younger people on trips in a year occurred in 1993 (22% aged below 35 years) and 1995 and 2000 had the least (2% and 4% respectively). The changing age of participation may have been partially due to the introduction of tag-along trips (as trips became cheaper). The two trips in 2003 were both turtle-tagging trips which were more physically difficult trips than most others and this may account for the younger ages of participants.

Table A13.4 indicates 36% of all participants, (n=649), were retired and Table A13.5 reveals 31% of all people, (n=435), were retired. Comparison of these two tables shows 57% of all participants (n=649) and 61% of all people (n=435) were employed. Home duties, students, unknown and unemployed constituted less than 4% each in both tables. The highest proportion of 'retireds' (for all participants per year) was 53% in 1998. The lowest proportion was in 2001, with 28% retired (discounting 2003). The proportion of employed was highest in 2001 (64%) and lowest the previous year in 2000 (50%).

Table A13.3 Landscope Expeditions, age categories of participants by year by percentage, 1992-2003

Age category	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	Total
<25	5	7	2	2	2	3	0	0	0	4	5	8	3
25-34	0	15	5	0	9	4	3	8	4	8	6	0	5
35-44	26	9	21	17	13	7	15	20	20	31	26	67	23
45-54	26	17	20	34	34	40	30	32	39	28	35	8	29
55-64	32	30	30	34	33	31	25	26	26	21	23	17	27
>=65	1	22	17	13	9	13	28	14	11	7	3	0	12
Unknown	0	0	5	0	0	0	0	0	0	0	2	0	1
	100	100	100	100	100	100	100	100	100	100	100	100	100

Table A13.4 Landscope Expeditions, percentage of occupation of all participants by year, 1992-2003

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	Total all years
Retired	37	33	30	40	38	37	53	40	41	28	38	17	36
Home duties	5	4	0	0	2	4	5	2	4	0	1	0	2
Employed	53	59	60	55	56	55	43	54	50	65	58	75	57
Unemployed	0	0	0	2	0	0	0	0	0	0	0	0	0
Unknown	5	0	9	4	3	1	0	2	2	6	2	0	3
Student	0	4	1	0	2	1	0	2	2	1	1	8	2
	100	100	100	100	100	100	100	100	100	100	100	100	100

Tables A13.6 and A13.7 indicate that the vast majority of participants were from Western Australia (76% of all participants, n=649, and 75% of all people, n=435). Three per cent of all participants, or 4% of all people, were from overseas. Overseas visitors came from the United Kingdom (6), New Zealand (1), Europe (6), USA (4) and Singapore (2). All other states had low levels of participation (less than 9% of total) and in descending order were NSW, Victoria, South Australia, Queensland and Tasmania, with around 1% unknown. From 1992-1996, 79% or more of participants each year were Western Australian. But from 1997 onwards, the figure was always below 78% (except for 2003) and in 2002 only 60% were Western Australian.

Tables A13.8 and A13.9 reveal that 9% of all participants (n=649), and 10% of all people (n=435) were schooled to HSC level, 6% of all participants and 6% of all people achieved, or partially achieved a diploma, 12% of all participants and 10% of all people partially or fully achieved a college certification, 45% of all participants and 47% of all people achieved, or partially completed a university degree and for 27% of all participants and 24% of all people the education level was unknown. The first year of operation, 1992 was unusual with the lowest levels of education (HSC 26% and college 32% while completion of university was 26%) and 2002 and 2003 had the highest proportions of educated participants (completion of university at 62% and 67% respectively).

Table A13.5 Landscope Expeditions, percentage of occupation of all people by year, 1992-2003

Occupation	Total	Per cent
Retired	134	31
Home duties	9	2
Employed	266	61
Unemployed	1	0.2
Unknown	17	4
Student	8	2
Total	435	100

Table A13.6 Landscope Expeditions, residential location of participants by year by percentage, 1992-2003

Residential location	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	Total
NSW	5	4	9	9	3	9	3	0	11	14	11	8	8
Victoria	0	0	0	6	8	6	8	14	9	6	12	0	6
Queensland	0	2	1	0	2	0	0	0	0	0	3	0	1
South Australia	0	7	4	0	2	9	13	2	0	3	6	0	4
Western Australia	95	85	79	85	86	72	75	76	78	72	60	92	76
Tasmania	0	0	0	0	0	0	0	0	0	0	2	0	0
Unknown	0	2	4	0	0	0	0	0	0	0	0	0	1
Overseas	0	0	4	0	0	4	3	8	2	6	6	0	3
Total	100	100	100	100	100	100	100	100	100	100	100	100	100

Table A13.7 Landscope Expeditions, residential location of all people, 1992-2003

Residential location	Total	Percentage
NSW	37	9
Victoria	30	7
Queensland	6	1
South Australia	12	3
Western Australia	325	75
Tasmania	2	0.5
Unknown	4	1
Overseas	19	4
Total	435	100

Table A13.8 Landscope Expeditions, education level of participants per year by percentage, 1992-2003

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	Total
HSC	26	17	10	8	6	7	15	8	2	7	7	8	9
Diploma or part	5	0	5	11	8	7	3	2	7	10	6	0	7
College or part	32	17	15	8	17	18	15	8	13	6	5	0	12
University	26	35	31	47	45	40	35	50	48	42	62	67	44
Part University	0	0	2	0	3	0	0	2	2	1	0	0	1
Unknown	11	26	36	26	20	24	30	30	28	34	20	25	27
Student	0	4	1	0	0	0	0	0	0	0	0	0	0
	100	100	100	100	100	100	100	100	100	100	100	100	100

Table A13.9 Landscope Expeditions, education level of all people by percentage, 1992-2003

Education level	Total	Per cent
HSC	44	10
Diploma	32	7
College or partial	45	10
University	200	46
Partial university	6	1
Unknown	105	24
Student	3	1
Total	435	100

Repeaters versus once-only participants

Since the program's inception, 110 people (25%) have taken more than one trip (Table A13.10). These people have done 327 trips or 50% of all trips. Removing their first trip (when they were not repeaters), 33% of all trips were undertaken by repeaters. Annual variation in the level of repeaters was partly a function of time, as the longer trips have been running, the greater the chances someone will repeat. Despite this, significant variation in the percentage of repeaters from year to year existed. Table A13.11 indicates the two highest years were 2000 with 60% of participants being repeaters, and 1998 with 50%. Both years had low numbers of overall participants (see Table A13.1). Repeat levels were also examined at the trip level using past trip reports from trip 21 (1997) to trip 46 (2001). The proportion per trip varied dramatically between one repeater and nine first-timers, 10% (on trip 25) to five repeaters and 2 first-timers, 71%, (on trip 27). It was not possible to determine whether any of the trip characteristics were affecting the choice to repeat.

Table A13.10 Landscope Expeditions, the number of times people have participated in trips, 1992-2003

Number	Total	Percentage	Male	Percentage	Female	Percentage
One time	322	74	156	36	167	39
Twice	59	14	25	6	34	8
Three	25	6	9	2	16	4
Four	11	3	7	2	4	1
Five	7	2	4	1	3	
Six	5	1	1		4	1
Seven	1	0	0		1	
Eight	1	0	0		1	
Nine	0	0	0		0	
Ten	1	0	0		1	
Total	432(a)	100	202(a)		230(a)	

(a) three 'unknown' are not included

Table A13.11 Landscope Expeditions, the percentage of repeaters per year, 1992-2003

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Per cent	17	30	30	28	36	60	42	50	38	44	33

The profiles of repeat participants (n=110) were examined. Forty-six repeaters were male (42%) and 64 (58%) female. The three highest repeaters (between 7 and ten times) were all female, and females undertook 62% of all repeat trips (202 of 327). Comparing the profiles of repeaters to all people who had been on a Landscope Expeditions trip, more were retired (45% of repeaters compared with 31% of all people) and fewer repeaters were employed (48% compared with 61% for all people). Education levels between repeaters and total people did not vary greatly, although college or partial college completion was higher for repeaters (14% compared with 10%). All other education figures showed less variation. A comparison of age data for repeaters could only be done between repeat participants (n=327) and all participants taking trips (n=649). Fifty-one per cent of repeat participants were aged 55 or older compared with 39% of all participants.

Changes over time

The historical profile of participants was examined to determine whether any alterations over time had occurred. This was difficult to determine due to low numbers and outside influences (such as the Sydney Olympics that changed holidaying patterns in Australia). The total number of trips per year, and hence participants, has fluctuated. Both the first and last year are clearly different.

In 2003, only two trips were included in this research. These were identical and physically demanding and attracted mostly Western Australians (92%), had the greatest proportional dominance of men (67% to 33%), the greatest proportion of people in the 36-45 year old category (67%) and the lowest in the 56 years or older group (17%). These trips also attracted the lowest number of retired people (17%), the highest proportion of professionals (33%) and greatest proportion of university educated (67%).

The first year the program was run in 1992 also had a clearly different socio-demographic profile of participants. It had the lowest proportion of university educated participants (26%) and highest levels of HSC (26%) or college (32%) educated, highest

proportion from Western Australia (95%) and lowest level of professionals (5%) compared with other years.

Discounting 1992 and 2003, it is difficult to see any clear trends in the statistics. There does appear to be a drop in the proportion of Western Australians who participated in the trips since 1997. The age of participants also decreased since 1999.

The years 2001 and 2002, showed a markedly higher number of total participants, with the addition of tag-along trips. The introduction of tag-along trips may create a higher level of repeat participants from Western Australia as the trips become cheaper for people who already have a suitable vehicle.

Comparison with the Australian population

As most participants were Australian residents, Australian Bureau of Statistics (ABS) data for the Australian population was compared with that of all participants to indicate variations between the profiles of trip participants (n=649) and the total population.

Australian Bureau of Statistics census data showed 50.6% of the Australian population was female and 49.4% male (Australian Bureau of Statistics, 2002) yet 57% of all participants were female and 43% male. Compared with the Australian population, Landscope Expedition participants were older (see Table A13.12).

Table A13.12 Comparison of ages of Landscope Expedition participants with the Australian population

Age category	Per cent of total Landscope Expedition participants, n=649	Per cent of Australian population, (ABS, 2001)
<25	3	>34
25-34	5	15
35-44	23	15
45-54	29	12
55-64	27	9
>=65	12	13
Unknown	1	

ABS data states only retirement levels from the labour force of those aged 45 years and older (Australian Bureau of Statistics 1998). This was 17% of the total Australian population, a much lower figure than that of all participants on Landscope Expedition trips (36%). ABS data on educational attainment showed 17% of the total population between 25-64 years old had a Bachelor degree or higher (Australian Bureau of Statistics 2001b) compared with 45% of all participants on Landscope Expeditions trips.

Conclusion

The comparison indicated people who had participated in Landscope Expedition trips were significantly older, similar in gender mix although females exceeded males, consisted of a higher level of retired people, were mostly drawn from within the State and had a much higher level of educational attainment at the university level, than Australia's total population.

Although there were differences between years, there are no clear trends in terms of changing socio-demographic participation in these trips. More people outside Western Australia appear to be joining and younger people appear to be participating. The extent the inclusion of tag-along trips may have encouraged these changes is not clear.

Appendix 14
First Survey Comments by Respondents who Answered the Second Survey, n=60

Table A14.1 Responses to question 6, first survey, showing the highlights of the trip by the second survey respondents only

Code	Number of responses	Per cent of respondents
Helping trip/results/work/the task	22	37
Different, new environment, scenery, specific place	19	32
Seeing species, being close-up, handling animals	16	27
People in general, and on team	16	27
Learning/understanding	15	25
Cultural	10	17
Leaders	8	13
Close-up or handling animals/ species	8	13
Personal	7	12
Remote area, new area, exploring/not a tourist place	5	8
Other	4	7
Total	130	

Table A14.2 Responses to question 4a, first survey, regarding motivation to join the trip by the second survey respondents only

Reason for joining a trip	N	Mean	Std. Deviation	Reason for taking the surveyed trip, per cent*	Reason for wishing to take another trip, per cent **
Learn about research subject	60	1.58	0.79	57	37
Learn about area	60	1.67	0.80	52	25
To see new things	59	1.80	0.83	43	22
Help scientists get data	60	1.70	0.87	47	23
Meet people with similar interests	59	2.25	1.09	32	45
To help organization	60	2.07	0.88	30	0
Sense of accomplishment	59	2.17	1.10	32	50
Use skills to help others	58	2.17	0.96	25	5
To feel closer to nature	59	2.24	1.14	33	8
To have a different holiday	60	2.77	1.20	13	13
Have fun	60	2.80	1.12	13	2
To relax	59	3.36	1.14	5	0
To get work experience	60	4.13	1.31	8	5
Join family/friends	60	4.30	1.08	3	2

* per cent who rated the reason for taking the surveyed trip as 'very important'.
** per cent in the second survey who stated they would like to take another trip for this reason (question 4).

Table A14.3 Responses to question 9, first survey, examining how respondents would use the skills and knowledge they gained again by the second survey respondents only (n=60)

Code	Number of responses
On other trips	16
Increased knowledge	14
Pass on to information to others	9
Use in volunteering	6
Use on own travels/own property	4
In future study	4
Increased scientific understanding	3
Use in future work	3
Use non-environmental aspects of trip	3
Other	2
Total	64

Appendix 15
Landscope Expeditions Volunteer Comments

Table A15.1 Landscope Expeditions: Volunteer comments for the trip reports stating why they joined, 1997-2001

Trip	Year	Participant Numbers	Already volunteer	Regular traveller	Help conserve flora and fauna	Location	Activity	Social interaction	Other
21	1997	13	2	5	8	7	2	2	
22	1997	13	0	8	8	1	5	0	4
23	1997	-	-						
24	1997	9	4	3	7	4	4	2	0
25	1997	10	1	3	2	6	8	0	0
26	1998	9	3	0	8	2	5	2	3
27	1998	7	1	0	6	5	0	2	1
28	1998	7	1		5	7	1	1	0
29	1998	8	3	0	5	3	0	4	1
30	1998	11	2	0	9	3	4*	0	0
31	1999	13	3	4		3	9	1	
32	1999	13	6	10		7	5	3	
33	1999	8	3	3		0	5	4	
34	1999	15	1	2		8	10	2	
35	1999	8	3	2		2	5	1	
41	2001	9	2	4	3	4	4	1	
42	2001	24	4	3	17	5	2	0	
46	2001	7	1		5	3		1	3
Totals		**184**	**40**	**47**	**83**	**70**	**65**	**26**	**12**

*= astronomy

APPENDIX 16
Published Articles

When Volunteers Pay to Take a Trip with Scientists
– Participatory Environmental Research Tourism (PERT)
Claire Ellis

Published in 2003 Human Dimensions in Wildlife, 8(1):75-80

Abstract
This article defines and explores the current global level of the Participatory Environmental Research Tourism (PERT) sub-sector. This sub-sector refers to one type of volunteer vacation or conservation holiday, where participants pay to work as volunteers helping wildlife managers in environmental field research. From the wildlife manager's perspective the PERT sub-sector provides an alternative means of funding and another vehicle through which to achieve goals. Variations in models and styles of operating will impact on the resulting costs and benefits of running these programs. Initial research shows the PERT sub-sector is characterized by not-for-profit agencies, is wildlife-based and focused on the Americas. Marketing trends are also discussed. By highlighting existing activities in this area this paper aims to stimulate further research.

Keywords: Environmental field research, Participatory environmental research tourism, Volunteer vacations, Research expeditions, Volunteering

Introduction
In the last thirty years there have been significant budget cuts for many areas of natural resource management yet there is recognition that decisions must be based on sound ecological data. Frustration with the short-term grant and budget cycles has encouraged the development of a variety of programs to help alleviate this. There has also been an increased acceptance of the necessity and benefits of incorporating the public in environmental monitoring projects (Cuthill, 2000; Gobster & Hull, 2000). Programs using members of the local community exist but these programs may not be sufficient to fulfill all management goals, particularly in areas where there is a sparse population (Cuthill, 2000). Faced with the rising demands of tourism, programs have been developed allowing volunteers to participate in a scientific field trip in return for financial support. This article briefly explores the development of these programs and coins and defines the term Participatory Environmental Research Tourism (PERT) to describe them. PERT requires short-term travel by volunteers to undertake a hands-on role in flora or fauna field research. Trips must be advertised publicly and volunteers contribute financially to fund the research. In this article all 'volunteers' are also 'tourists' (as all are paying to take a trip) and are 'non-specialist' volunteers. Business structures, research focus, locations, and marketing trends are summarized.

This research is part of an on-going doctoral research program. The purpose of this article is to develop a definition of the PERT sub-sector and present indicative figures with the aim of stimulating further research in this area.

Factors Affecting Development of Sub-sector

An extensive literature review was conducted revealing several factors influencing the growth of environmental volunteering as a holiday activity. Environmental volunteering, conservation work camps and amateurs working in natural history areas are not new (Robin, 2001), but by the 1970s agencies that specifically aimed to use tourism to support environmental field research emerged. The initial push came from the scientific community looking for new alliances and methods of working arising after severe budget cut backs. This growth in supply coincided with a growing green movement that raised environmental awareness, changed public attitudes in many western countries and provided demand for these programs. Significant changes were occurring in western societal volunteering profiles and motivations. A paradigm shift away from altruism and towards self-interest as the major motivating factor has occurred in the volunteering area (United Nations, 2001) together with a rise in episodic volunteering (Gazley, 2001). The tourism industry and not-for-profit agencies have increasingly partnered to provide experiential, educational and rewarding holidays (Turner, Miller, & Gilbert, 2001) that meet this demand. These changes have created avenues for scientists looking to fund their research through PERT-style programs.

Significant benefits have been suggested from volunteer involvement in ecological work (Darwall & Dulvy, 1996; Robin, 2001) including social capital and civic outcomes associated with volunteering (Gobster & Hull, 2000). Much of the discussion has focused on local community volunteers and the outcomes for the types of trips discussed here are largely untested.

Methodology

This research aimed to gather key indicative data on the level and type of activity in the PERT sub-sector. Research techniques included an extensive literature review, discussions with operators and a survey of operator data in the broad area surrounding the PERT sub-sector. An iterative approach was used during the survey to determine the relevant factors within the industry that separate this market niche and to allow the development of a workable PERT sub-sector definition. The research was based on English speaking programs advertised on the Internet or in written media. Over 170 agencies were examined. Thirty-nine fell within the PERT sub-sector definition, offering 887 trips.

Although the Internet contains biases regarding user profiles, recent studies in volunteering (McCurley, 2001) and in the environmental volunteer holiday area (Ausenda, 1998) demonstrate the Internet is becoming more widely used for the dissemination of information and can be a useful research tool. Some smaller or more recently established operations may not have an Internet presence and because of the methodology adopted are likely to be under-represented.

To analyze the PERT sub-sector a workable definition was required. Definitional criteria were developed based on market segmentation principles (Moscardo, Pearce & Morrison, 2001) with the following trip characteristics used to define this sub-sector:

- overnight travel plus one-way travel of 40 km or more;
- active participation by members (hands-on role) in flora or fauna field research or data collection;
- advertised publicly;
- participants are volunteers;
- trips are less than one month in length, using 'fixed dates'; and
- participants make a financial contribution to the project.

Some of the trip characteristics seem initially clear but most contain boundary issues. For instance the definition requires trips to be publicly offered as this does not require or expect extensive prior knowledge or experience from participants. The definition excludes trips only offered to a restricted group not only due to the issue of identifying these, but also since groups such as some bird associations often bring extensive local knowledge and skills to a project (Robin, 2001) and researchers are therefore able to use these volunteers in more specialized ways. This distinction in the PERT definition accords with the separation between the terms 'non-specialists' and 'volunteers' (Bleich, 1998; Darwall & Dulvy, 1996) when examining issues regarding the validity of volunteer data (a significant logistical constraint in this sub-sector). However, associations such as Earthwatch were included. These use membership for funding reasons, but also advertise the trips broadly and do not expect participants to have specific prior knowledge.

This research only included 'fixed date trips' (often called research expeditions) and excluded 'flexible date trips' (more often associated with eco-lodges or field research sites) that allow visitors to nominate their own arrival and departure dates. The logistics of the two usually differ and 'fixed dates' enable the number of trips per year and the focus of each trip to be identified.

As a primary goal of these research projects is field research, the PERT sub-sector does not include conservation work such as trail maintenance or construction, habitat restoration, removal of invasive weeds, campsite rangers, activism and similar work (although there are elements of research contained within some of these tasks, such as identification of plant species).

This research was completed in December 2001 and trips offered were classified according to location and subject matter. Where more than one species or subject was being studied during a trip, the first mentioned was used as the classifier. If the study included multi-flora and fauna and it was not possible to distinguish a key species, the trip was classed as 'ecology'. Turtles were separated from other reptiles due to their popularity.

Characteristics of the PERT Sub-sector

Business Structures of Identified Operators

Of the agencies operating in this area not-for-profits constituted 77%, commercial operators 13%, government 5%, universities 3% and unstated 3%. These figures are partly a product of the definition and methodology. For instance, many universities conduct research trips but due to the accreditation process and differing motivations, students are not classed as volunteers. There are two likely reasons for the predominance of not-for-profits. First, the USA (the most active country in this field) allows a tax deduction for these types of trips taken with a registered not-for-profit agency. Most USA-based programs are strictly structured (and are often more expensive) than UK programs that may combine volunteering with a sightseeing trip. Second, the not-for-profit sector has increasingly turned to tourism as a means of obtaining funds from members as well as fulfilling their goals of education, scientific research and conservation (Turner et al., 2001).

Formal and informal partnerships are very common and the business structure statistics are also a reflection of the methodology. Classification was done on the key operator. Researchers often require only a few seasonal trips per year and maintaining a permanent administration is not feasible. Instead the logistics are often coordinated through commercial tour operators or not-for-profit groups (increasing the statistical frequency of these groups).

Research Focus and Locations

The most popular trip subject was 'marine mammals' representing 29% of all trips, followed by 'terrestrial mammals' 22%, 'turtles' 17%, 'marine biology' 11%, 'birds' 8%, 'ecology' 5%, 'plants' 2%, 'reptiles' 2%, 'insects' 2%, 'freshwater fish' 1% and 'amphibians' less than 1%.

Bird trips were lower than initially expected but this is due to the definitional criteria. Most bird association trips are excluded from this sub-sector as they fail one or more criteria, such as being advertised only through associations and not publicly, or as they contain no financial contribution to the project.

The data shows a distinct preference within the PERT sub-sector for certain species or groups of animals. Further research is required to demonstrate the extent this may be demand or supply driven. For instance turtle tagging is popular as many people like turtles and are concerned about their highly publicized drop in numbers. Turtles nest on beaches in warm climates and the volunteer work is mostly at night allowing participants free time during the day to relax or sightsee, so holiday motivations may be relevant. However, supply factors also influence the research opportunities on offer. These include scientific concern about species decline, the promotion of tourism to minimize turtle egg poaching, the ability to quickly train volunteers in the protocols required and the difficulties of funding long-term turtle tagging and monitoring programs through conventional short-term grant processes. Clearly there are a number of possible factors contributing to the success of any research opportunity.

The locations of these research opportunities are not evenly distributed. Central and South America accounted for 30% of the total, North America 20%, Europe 17%, and Australia/New Zealand and the Pacific 14%. A brief analysis of the broader volunteer vacation market (Gazley, 2001) confirms an under-representation of Asia, the Middle East and Africa.

The availability of programs also depends on the goals of the natural resource manager and the balance made between using locals or paying volunteers who usually (but not always) are from outside the area. These two groups are not necessarily mutually exclusive but the utilization of each has different costs and benefits.

Marketing Trends

Marketing is a significant problem for most agencies in the PERT sub-sector. Advertising for volunteers can create a sizeable increase in administration and this may be exacerbated by remote locations and poor communications. Larger agencies may be able to cope with this, but they still suffer from criticism that too high a percentage of volunteer funds are spent on administration and brochures.

Recognizing the problems of small operations, middlemen (such as The Ecovolunteer Network) have emerged to simplify the process of matching volunteers with the right scientific project. There has also been a significant growth in gray literature on this topic with numerous books (Ausenda, 1998; McMillon, 1999) and Internet sites offering links between volunteers and appropriate volunteer vacations. This process is important as most agencies rely on volunteers properly reading the material and self-selecting for a trip that they are physically and mentally able and willing to undertake.

Conclusion

This exploratory research developed the definition for the PERT sub-sector and indicated it is still relatively small in size. Natural resource managers, governments, scientists, universities, commercial tour operators and not-for-profit agencies are active in this area, frequently in either formal or informal partnerships, with not-for-profit agencies being the dominant operators. The results suggest the sub-sector is wild-life based and focuses on the Americas. Literature suggests the potential benefits are extensive. As the consumer increasingly becomes more familiar with the PERT sub-sector as a holiday option, and as the number of researchers skilled and knowledgeable about developing programs and protocols for volunteers increases these types of trips may increase. This paper aimed to highlight the development of the PERT sub-sector to encourage discussion and further research into its potential.

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Participatory Environmental Research Tourism – A Global View.
Claire Ellis

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Abstract
The use of volunteers by natural resource managers has become quite widely accepted, but the development of programs where tourists volunteer and make a financial contribution is less widespread. This article focuses on one type of volunteer vacation or conservation holiday, where participants pay to work as volunteers helping conduct environmental field research. It is a developing area that increasingly is being recognised by potential travellers as a holiday choice. Importantly participatory environmental research trips also provide scientists with an alternative means of funding research and another vehicle through which to achieve goals. These types of programmes allow tourism to actively support conservation and sound ideal, but there are also significant constraints and issues. Varying partnerships and operating structures impact on the resulting benefits and costs for all stakeholders. This article defines and examines the global development of the Participatory Environmental Research Tourism (PERT) sub-sector. By exploring the existing activities within the sub-sector it is hoped to highlight operating characteristics, current logistical constraints and stimulate further research.

Extensive discussions regarding the potential positive influences tourism can have in the environmental area are found in literature on ecotourism, sustainable tourism and the associated area of wildlife tourism (Roe, Leader-Williams & Dalal-Clayton, 1997)). Potential effects are dependent on the style of tourism proposed and the location. This paper discusses a specific area where short-term travel is undertaken by non-specialist volunteers to participate in flora or fauna field research. Trips are advertised publicly and volunteers financially support the research. All 'volunteers' are also 'tourists' (as all are paying to take a trip). The historical development of this type of tourism is briefly explored and the term used to describe the sub-sector, Participatory Environmental Research Tourism (PERT), is defined.

The definitional development was done in tandem with a global search that involved locating and identifying various agencies undertaking these types of operations, analysing their similarities and differences and then determining useful and legitimate characteristics for defining the PERT sub-sector and hence the area of research. This process used an iterative (grounded theory) approach (Strauss & Corbin, 1990). Initial possible definitional characteristics were revised as a greater understanding of the operational and theoretical differences surrounding programmes and agencies became clear. Although the definitional development and global search were conducted concurrently results are presented separately in this paper for clarity.

By identifying the PERT sub-sector its characteristics can be examined in more detail. The global trip characteristics, locations, trip costs, regional differences, structural composition and management issues are discussed. A better understanding of the PERT

sub-sector should help indicate when, where and how these types of programmes may be usefully employed and further research directions are outlined.

Introduction

Since the 1970s agencies have emerged that specifically facilitate the linking of paying volunteers with environmental researchers on a field trip. This has helped finance and support field research that otherwise may not have been feasible. The growing demand for educational learning, wildlife tourism and environmentally friendly activities may have contributed to demand for these types of trips. The research fields of serious leisure, volunteerism, natural resource management and tourism have all contributed to an understanding of the area. This paper examines the development of the sub-sector, defines it and terms it Participatory Environmental Research in Tourism (PERT) extending earlier work by Ellis (2003). During the definitional process a global search for agencies arranging trips within the PERT sub-sector was conducted. This work helped reveal indicative data on the PERT sub-sector, operational aspects and indicated the need for further research.

Related terminology includes 'volunteer vacations' and 'service trips' (used through the Americas), and 'working holiday' and 'conservation holidays' (used through the United Kingdom and Europe). These terms overlap but also have differences. For instance, 'conservation holidays' can include historical conservation work and 'volunteer vacations', 'service trips', and 'working holiday' include a wide range of community development work. The work here focuses on environmental field work. It is not the purpose of this paper to extend definitional arguments but to highlight the area the PERT sub-sector lies within.

Literature Review

Literature in the fields of volunteering, serious leisure, natural resource management and tourism is extensive but the area of overlap has not been systematically dealt with.

Parallels between serious leisure and volunteering have been recognised and common motivation and demand aspects have been explored (Henderson, 1984; Stebbins, 1996a). But many of the types of volunteering discussed do not involve tourism. Wearing and Neil (2001) linked volunteerism, serious leisure and ecotourism and looked at extending the understanding of alternative tourism experiences through this linkage again focussing principally on motivational issues. (Macduff, 1995) distinguished between regular or traditional patterns of volunteering and episodic volunteering or short term, sporadic service. Gazley (2001) extended ideas by McCurley and Lynch on short term volunteers with respect to volunteer vacations. She looked at motivations, the extent agencies met the mix of altruism and self-interest of volunteers, the range of agencies active in this area and logistical issues concerning volunteer management including recruitment and retention. Volunteer vacationers appear to have the same motivations as long term volunteers but the relative value of various factors is different with self actualisation being very important for short-term volunteers (Gazley, 2001). Gazely (2001) suggests this may lead volunteers to look for opportunities not only for service but for learning and growth in volunteering may be increasingly focus on education.

Most agencies within the PERT sub-sector encourage participants to become repeat trip-takers. Retention rates are considered one of the keys to success in managing volunteer programs (Lynch, 2000) and the commitment to three aspects – the organisation, the task, and to people are considered crucial in determining retention (Forster, 2001). With episodic volunteers the commitment to the agency tends to be lower and issues surrounding the attracting and retention of episodic volunteers are more complex than traditional volunteer management (Gazley, 2001), although the principles (Pinkney-Baird, 1993) are the same. Episodic volunteers in the area of volunteer vacations provide service of a short-term nature once or on a recurring basis, but the differences for the agency are not yet clear (Gazley, 2001). Generally programmes must meet the needs and goals of each of the key stakeholders to remain successful. The programme must be designed, managed carefully, contain ongoing training and supervision of volunteers and requires evaluation. In addition, to ensure continuing support, enthusiasm must be maintained, the relevance of the programme demonstrated, feedback on progress given and a sense of ownership of the programme instilled. Further research is required to determine the parallels between these volunteering concepts and those within tourism examining the inter-relationships between motivations, expectations, perceptions, satisfaction levels and product loyalty in creating repeat visitation.

Numerous authors have recognised the direct contributions tourism can make to the environmental field research. Financial contributions plus free labour are the obvious direct benefits but broader positive outcomes exist. Concepts regarding creating environmentally significant behaviour change (Stern, 2000) and influencing the long-term attitudes and behaviours of the public towards wildlife and the natural habitat have been adapted into tourism (Ham, 1992); (Orams, 1996a) and natural resource management (Duffus & Dearden, 1990).

Specific benefits suggested include influencing the political mandate for an area, for an agency, or for a species or group of species (Gilmour & Saunders, 1995). Additional potential benefits include an increased public understanding and support for scientific research and environmental conservation (Gilmour & Saunders, 1995), greater pool of trained volunteers, improved environmentally friendly behaviours of the public, and the personal benefits that each volunteer gains from involvement (Henderson, 1984; Stebbins, 1996a; Wearing, 2001). Volunteering develops social capital (Independent Sector & Volunteers, 2001; Winter, 2000) and this has been demonstrated within the environmental context by the analysis of the value of the act of ecological restoration as well as the value of the restoration itself (Light & Higgs, 1996:235).

A range of other benefits may potentially accrue from PERT-style tourism depending on the structure and goals of the agency or operator. The benefits include closer and more positive relationships between tourism operators and natural resource managers, improved interpretation by guides (Talbot & Gould, 1996), a more positive marketing image for the agency (this may be relevant to both a commercial operator and a Government agency that must account for how taxpayers dollars are spent), enhanced visitor satisfaction (Crabtree & Gibson, 1991; Kahn & Johnstone, 1995) and the ability for researchers to remove themselves from the short-term nature of the grant process and

self-manage a long-term income stream. Further positive outcomes could also be hypothesized but while potentially there are many benefits few have been measured.

Academic work has been undertaken in the environmental volunteer tourism area but most authors have focussed on one project, one type of trip or one organization (Kenneally & Paton, 2002; Weiler & Richins, 1995; Weiler, Richins & Markwell, 1993), discussed broader issues in volunteer tourism (Wearing, 2001; Wearing & Neil, 1997) or dealt with a specific issue such as the validity of volunteer data (Mackney & Spring, 2001).

Some specific management issues within the PERT sub-sector have been identified. The need for strong partnerships between several groups and the differences that emerge between scientists and conservationists are relevant (British Ornithologists' Union, 1994). The use of volunteers has been viewed sceptically within the scientific community (Mackney & Spring, 2001). Despite this, established protocols for some species and types of work exist such as bird watching (Galbraith, Grice, Mudge, Parr & Pienkowski, 1995); (Bildstein, 1998) and marine ecology (Mumby, 1995); (Mackney & Spring, 2001). Another area specific to the PERT sub-sector is the criticism of elitism that stems from potential volunteers not being able to afford to participate. This is countered by agencies using internships and scholarships to allow teachers, students and other individuals to participate. The Department of Conservation and Land Management (CALM) in Western Australia, have integrated PERT-style trips with local community volunteering and volunteers in clubs and associations to achieve a wide set of goals. Earthwatch Institute trips have been used to help educate local communities and bring school groups and local Government individuals as day visitors to the research site (Gilmour & Saunders, 1995).

The Historical Development of Environmental Volunteering Tourism

The concept of a working break is well established with examples of environmental volunteering, conservation work camps (McIntosh, 2001) and amateurs working in natural history areas (Leopold, 1949; Robin, 2001) being documented since the beginning of the twentieth century. Work camps still exist but the many are not research-based and are not always voluntary in nature.

By the 1970s organizations focusing on research-oriented voluntary tourism appeared (Ellis, 2003). Factors influencing both supply and demand are relevant. The initial impetus came from scientists and according to Nicholson, founding chairman of Earthwatch Europe:

> the field sciences have become the Cinderella of the sciences, due to decisions taken in the 1950s which led to the bulk of science funding going into medicine, physical sciences such as nuclear power, and space research (Marshall, 2000).

Nicholson continued that although people initially believed that part of the job of the field scientist could be done from orbiting satellites such as Landsat and Skylab, without an army of "foot soldiers" to confirm the images, these are largely useless. Natural resource management budget cut backs in many western nations encouraged an examination of

alternative funding options. Increased acceptance of the benefits and the necessity of incorporating the public in environmental projects meant the scientific community started exploring ways to achieve various scientific and natural resource management goals utilising members of the public (Cuthill, 2000; Darwall & Dulvy, 1996).

Together with the push to fulfil scientific requirements and heighten the public profile of scientific research, a number of demand factors appear to have impacted the formation of the PERT sub-sector. The growth of the green movement combined with changes in western societal volunteering profiles and motivations (United Nations, 2001), and the growth of public interest in wildlife have contributed to the rise in environmental volunteering. Demand stems not only from a rising awareness of conservation but also from the increased appeal and understanding of specific wildlife species. For instance, the significant rise in popularity of bird watching (Bildstein, 1998) has been attributed to greater education of the public through mediums such as television documentaries and also the availability of good field guides (British Ornithologists' Union, 1994:57).

The growth in environmental volunteering occurred concurrently with a boom in alternative tourism. The motivations to undertake environmental volunteering or travel for enrichment, and experiential and educational travel (Douglas, Douglas & Derrett, 2001) appear to overlap in the area of environmental volunteering holidays. The rise in episodic volunteering (Gazley, 2001) and self-interest aspects of volunteering ((Gazley, 2001); United Nations 2001) also are likely to have supported the growth in environmental volunteering holidays.

Additional factors may have contributed to the development of the PERT sub-sector such as political interest in fostering volunteering (Patten, 1991). Moral and economic efficiency arguments have been put forward stating the tourism industry should use some of its financial gains to support conservation. The personal beliefs and commitment of some tourism operators has led to the establishment of a conservation outcome in their operations (Turner, Miller & Gilbert, 2001).

Development of the PERT Sub-sector

Public involvement in environmental volunteering is now well established in a number of countries and is seen as a means to engender community stewardship and understanding of conservation issues (Light & Higgs, 1996). But most environmental volunteering does not involve tourism. In the late 1960s agencies specifically focussing on programmes where paying volunteers were teamed with scientists who needed funds and resources for a specific project started to emerge. CEDAM International (now Conservation, Education, Diving, Awareness and Marine Research) started in the USA in 1967 to support Mexican marine archaeology projects. CEDAM now focuses on international marine conservation projects and provides the funding and volunteer divers for marine research.

Earthwatch Institute is probably the best-known agency running short-term research-oriented volunteering trips. Cherfas (1992) outlined the development of Earthwatch Institute stating it grew out of an organization set up by Robert Citron, from the

Smithsonian Institute in Washington DC, USA. Faced with cutbacks in science funding during the Nixon era, Citron sought an alternative and decided to go direct to the public for money, forming Educational Expeditions International in 1970. In Boston at about the same time, a group of professors at the Massachusetts Institute of Technology were worrying about similar funding problems and sought the assistance of an entrepreneurial American investment banker. The team's main priority was to discover where field workers could find the human and financial resources to fund research. The team from the Massachusetts Institute of Technology joined forces with Educational Expeditions International in 1971 and became Earthwatch (Cherfas, 1992).

Since 1971 Earthwatch Institute has sponsored nearly 2,900 research projects in 118 countries, contributing over US$50m to research and around 10 million hours of fieldwork. This is the combined output of over 65,000 Earthwatch volunteers who have contributing their time, private funds and skills (Earthwatch Institute 2003). Membership of Earthwatch is over 20,000 in the USA and 10,000 from another 48 countries. Over 71% of the research grants issued in 2001 by Earthwatch were in the PERT sub-sector (Earthwatch Institute, 2001).

Several other USA-based groups had similar ideas in the early 1970s but the development of PERT-style trips in Europe and the United Kingdom appears to have been slightly later. Active in local volunteering, BTCV (originally the British Trust for Conservation Volunteers) gradually included conservation holidays. BTCV ran its first international trip in 1984 (although ad hoc international exchange visits had been conducted since 1969). In 1988 an International Development Officer was employed to develop working holidays in each European country.

Some scientists requiring long-term funding and an administratively simpler and more flexible funding style than many structured grant programmes allowed, started their own agency. For instance, a whale researcher started Coastal Ecosystems Research Foundation (CERF) for this reason. Strong public support for the primary research subject, cetaceans, enhanced CERF's ability to attract paying volunteers.

Gradually trips within the PERT sub-sector became more widely known both by scientists and the public. The number of trips on offer has increased and logistics, marketing and operational aspects have been fine-tuned to the market.

Methodology

Identifying the PERT sub-sector and gathering data on it is problematic. An extensive literature review, a survey of operator data in the broad area surrounding the PERT sub-sector and discussions and correspondence with key stakeholders and other researchers were used to gather indicative data.

Initial work undertaken by Ellis (2003) developed a definition using an iterative approach and briefly examined the PERT sub-sector's characteristics. This paper states the methodological approach used and significantly extends the discussion on the level and type of activity in the PERT sub-sector to allow further analysis. An activities-based

perspective of the PERT sub-sector (descriptive) was used to examine what actually happens rather than a normative (or value-based approach) that looks at what should happen. An *a priori* approach was used (Moscardo, Pearce & Morrison, 2001) to develop a set of descriptors for the PERT sub-sector based on the activity and benefits sought. Both supply and demand-oriented factors were used (Day, Shocker & Srivastava, 1979).

The Internet and written media were used as sources for identifying English speaking programmes potentially within the PERT sub-sector. Studies indicate the Internet is increasingly being used for the dissemination of information relevant to this research, including volunteering (McCurley, 2001), tourism (Buhalis, 2001) and the environmental volunteer holiday area (Ausenda, 1998) although biases in user profiles exist (Schonland and Williams 1996; Weber and Roehl 1999). Under-representation of small or recently established operations with no Internet presence or with little press advertising possibly occurred. Care was taken to avoid duplication from multiple listings.

The research was undertaken from August to December 2001. Agencies offering 'fixed date' trips were identified and only these were included. Trips advertised during the search period were analysed and a calendar or financial year total per agency was tallied. This was not possible for all agencies as some only advertise upcoming trips and not a full year's programme. No trip data for more than a year for any company was included. Over 170 agencies were examined. Thirty-nine fell within the PERT sub-sector definition, offering 887 trips (Ellis, 2003). Logistical and confidentiality constraints prevented the calculation of the number of people volunteering, or more relevantly, the number of volunteer/days per year within the PERT sub-sector. Instead, the number of trips advertised was used as an indicator of the size of the sub-sector.

Definitional Development

The following trip characteristics were developed (Ellis, 2003a) to define the sub-sector:

- overnight travel plus one-way travel of more than 40km;
- active participation by members (hands-on role);
- flora or fauna field research or data collection;
- be advertised publicly;
- use volunteers;
- be short-term in nature of less than one month duration;
- contribute financially to the project; and
- 'fixed date' trips.

Each of these points is discussed below, extending the work in Ellis (2003) to demonstrate why the definitional characteristic has been included and issues surrounding its inclusion.

Travel

Participants must travel at least 40 km one-way away from their home and stay overnight or longer. This characteristic was used to help distinguish between 'volunteering tourist' and 'local volunteer'. Local community volunteering in the environmental field is widespread and while local volunteers could sometimes be classed as 'excursionists' or

'day-trippers' they generally consider themselves as working in a voluntary capacity rather than taking a trip or holiday. This clarification was necessary as 'locals' and 'tourists' may have different motivations for participating, different views on stewardship and local politics and a different capacity to regularly undertake the tasks.

Participation
The participant must be active in a hands-on capacity and not simply visit the site and watch scientists or conservators at work. Logistical and training aspects are essential for participation and this characteristic separates PERT-style trips from educational trips.

Flora and fauna field research
Animal and plant field research work may include surveying, monitoring or research. For the purposes of this paper, these concepts are grouped together and termed 'environmental research'. Hands-on conservation work such as track maintenance, weed clearing, clean-ups, or habitat restoration may involve tourism (such as visitor programmes at the Grand Canyon, USA) but are not included within this definition as the key goal is not the collation of field data or research.

Must be advertised publicly
Current literature often blurs the distinction between the terms 'volunteer' and 'non-specialist' (Bleich, 1998; Darwall & Dulvy, 1996), yet a 'volunteer' may be an unpaid expert in the field. This paper focuses on issues surrounding the use of 'non-specialists'. The requirement for trips to be advertised publicly generally indicates no specific prior knowledge by the participant and so logistical and training issues must be addressed.

Must be voluntary
The involvement of participants must be in a voluntary capacity. The term 'volunteer' has varying interpretations in literature but usually excludes students (Independent Sector & Volunteers, 2001). Good volunteer management practice supports the reimbursement of expenses (Independent Sector & Volunteers, 2001) but within the PERT sub-sector volunteers do not have their expenses (such as food and accommodation) reimbursed. Instead participants in the PERT sub-sector often pay more than their own transport and field costs as a contribution to a scientist's salary, to purchase needed equipment or to contribute to other research costs. This characteristic helps separate the PERT sub-sector from other types of voluntary work.

Length of time spent volunteering
Advertising and volunteer information confirms that both agencies and participants view short and long-term trips differently. The volunteer vacation sub-sector contains trips of varying lengths and the work output to training ratio is usually greater with longer trips. There appears to be a motivational difference between the short-term holiday-like segment and long-term volunteers. Short-term trips are mostly undertaken as a holiday by working people and the definition developed here uses a limit of one month or less. These trips tend to be more expensive, involve a higher training to output ratio, and suit quick and simple training and tasks.

Contribute financially to the project
The level of financial contribution to a project by a participant varies significantly. Examination of this area is difficult due to aspects being confidential or unclear. The requirement of a financial contribution to the project excludes many local volunteering examples.

'Fixed date' trips
Expedition-style trips and some field research stations advertise trips with set start and finish dates and are termed 'fixed date' trips. 'Flexible date' trips, where volunteers can nominate their own arrival and departure dates, are more commonly associated with ecolodges or field research stations. The types of training and logistical aspects vary significantly between the two. In this paper only 'fixed date' trips were used.

Definitional boundary
The definitional development concentrated on examining the characteristics that distinguish the PERT sub-sector from other closely related types of trips. Some determining factors are quite clear but the above discussion focussed on areas that required clarification. Market segments are not possible to explicitly define (Day et al., 1979) and rather than further validating the sub-sector as a distinct product market, the aim of this research was to examine the type of operations occurring within the PERT sub-sector. More specific follow-up research is required to determine whether the definition is accurately aligned to product market boundaries.

Analysis of Global Characteristics of PERT Sub-Sector Results
Global trip characteristics
Trips offered were classified according to their advertised focus. Where more than one species or subject was being studied during a trip, the key species (usually the first mentioned) was used as the classifier. Trips offered were classed as 'ecology' if a key species could not be identified. Because of the popularity of turtles they were classed separately from other reptiles.

The most popular area was 'marine mammals' representing 29% of all trips, followed by 'terrestrial mammals' 22%, 'turtles' 17%, 'marine biology' 11%, 'birds' 8%, 'ecology' 5%, 'plants' 2%, 'reptiles' 2%, 'insects' 2%, 'freshwater fish' 1% and 'amphibians' less than 1% (Ellis, 2003a).

Location
Central and South America were the destination for 30% of all trips, USA/Canada 20%, Europe 17%, Australia/New Zealand and the Pacific 14%, Africa 13%, Asia 5% and the Middle East less than 1% (Ellis, 2003a).

Headquarters were identified for 36 of the 39 agencies, and of these 44% were in USA/Canada, 26% in the United Kingdom and Europe, 23% in Australia, 5% in Africa and 3% in Asia. For agencies with more than one office, such as Earthwatch Institute, all trips were tallied to the head-office site.

The numbers of trips run by each agency were tallied by location of headquarters and USA/Canada ran 61% of all trips, United Kingdom and Europe 18%, Australia 9%, Asia 2% and Africa 1%.

Trip costs

Daily trip costs were calculated to give an indication of the target market of each agency. Trips were costed from the local point of departure and did not include international airfares to the location but were otherwise inclusive of food and accommodation to enhance comparability between agencies. Where one agency ran multiple trips an average was taken to obtain a daily cost. The costs were all adjusted into US dollars and grouped with the results in each category being low (US$25 per day or less) 3%, medium (US$26-50) 8%, medium-high (US$51-100) 31%, and high (over US$100 per day) 54% with 5% unknown.

Structural composition

A number of different types of agencies are involved in the PERT sub-sector. Trips distributed by several agencies or run in partnerships were counted once under the principal agency. The structure of the principal agency was tabulated and the results from the global search showed 77% were not-for-profit structures, 13% profit-making enterprises, 5% government agencies, 3% university and 3% unknown (Ellis, 2003).

Discussion

Global trip characteristics

Further research is needed to clarify the popularity of species or types of species. Both demand and supply aspects are likely to be relevant and potential reasons are discussed under 'further research' in this paper.

Fewer bird trips were identified than initially expected. Amateurs have made a significant contribution to science through bird surveying (Robin, 2001) and there has been a rapid growth in avi-tourism, yet bird trips accounted for only 8% of the total. Many research-oriented bird-watching trips are advertised through bird associations to attract skilled and interested volunteers and so were outside the definitional boundaries of this study. This may have contributed to the low level of this statistic.

Location

The locations of trips were not evenly distributed. Without further research, no conclusions can be drawn from this. The statistics were influenced by the English speaking focus of the search. Australia was likely to be over-represented as a more detailed examination was conducted in this area (to help ensure smaller operators were included). Trip location figures were also likely to be due to a combination of factors including the existing research locations of scientists attached to agencies involved in the PERT sub-sector, operational and logistical issues, perceived sellable destinations including locations that volunteers perceive need 'help' (such as a developing country), and sites containing charismatic animals accessible for research.

Globally Asia, the Middle East and Africa were under-represented in the broader volunteer vacation market (Gazley, 2001) and anecdotal information on global eco-volunteering supports the regional variation in headquarters. The USA is considered the leader, probably due to their strong history in this sub-sector, population size and relative affluence and the United Kingdom is estimated to be second overall and strongest in the youth market.

Regional differences exist and agencies based in the USA run trips that tend to be expensive but are tax deductible and people of all ages participate. The allowance of a tax exemption by the USA Tax Department (the Internal Revenue Service) for any registered not-for-profit agencies operating these trips has meant USA-based companies are careful not to call these types of trips 'tourism'. The law provides that a deduction for travel expenses including meals and lodging as well as the contribution to the field research programme can be made provided there is no 'significant' element of personal pleasure, recreation or vacation in such travel (McCormally & Blum, 1990). This has led most USA-based programmes to be run through not-for-profits and be strictly constructed around volunteering with perhaps a day per week or a few hours per day allowed off for a break. Any add-ons or travel is organised before or after the tour independently by the volunteer.

In contrast to this, a number of United Kingdom trips combine volunteering and tourism. For instance BTCV trips may include a three-day travel programme to a scenic site as a fun accent and break during a work trip. Discovery Initiatives, a British-based commercial operation runs trips of up to several weeks that include only a few days of actual research.

Despite many agencies having web sites for international marketing most volunteers still seem to prefer trips organized from their own country. Anecdotal discussions with participants indicated this may be partly due to the infancy of the sub-sector and the lack of knowledge about alternative agencies and their operational standards. Participants want to be sure the trip they are signing up for has been accurately represented given the considerable time and effort the participant will be contributing to the 'cause' and require reassurance of a trip's value before committing to it. Language difficulties with small team sizes can be problematic.

Trip Costs

Costs appear to be similar to a vacation in the same area although the living standards are lower quality and volunteers are working.

Structural composition

The most suitable structure for operating within the PERT sub-sector is not clear. The appropriateness of direct involvement of government departments in operating tourism enterprises is a political argument not confined to this type of tourism (Higginbottom, Rann, Moscardo, Davis & Muloin, 2001). Some natural resource managers prefer to keep control of research and the conservation process through licensing or other schemes rather than allowing private sector involvement as there is a perceived clash between

profit motives and long-term conservation aspects. Unprofitable or zero profit trips are of less interest to commercial operators.

Conflict is also evident where not-for-profit and commercial groups directly compete such as in Hawaii's whale watching industry with commercial operators claiming unfair competition. Less direct conflict also exists with Earthwatch Institute stating that their volunteers provide funding for scientists that would not otherwise be available as:

> "crucially, this is money which has normally been put aside for holiday expenditure, and would not normally be given to charity. It therefore represents new money for conservation"(Earthwatch Institute, 2000:9).

These trips are therefore providing additional competition for other tourism operators.

Management issues

Some agencies run their own trips while others require scientists to apply to the agency for a grant and act as middlemen linking volunteers with scientists. Managerial issues may be common to each of these two broad styles of operations but other issues vary depending on specific structural and situational factors. Operational issues raised by agencies during this research included:

- Managing volunteers to get required work done.
- Occupational health and safety issues.
- Estimating demand preferences in terms of locations, species and time of year.
- Short notice or changed dates for trips creating advertising problems.
- Sometime insufficient demand.
- Insufficient supply of the 'right' trips.
- Financial viability.
- Considerable administrative effort. This is exacerbated for seasonal programs and remote locations. The provision of sizeable marketing, administrative and logistical infrastructure is often viewed critically by prospective volunteers who can be sceptical of volunteer funds being diverted from field research needs. Commissions paid to travel agents or wholesalers are also contentious as volunteers assume their money goes directly to the project they are supporting.

Broader management issues in the PERT sub-sector raised in discussions with stakeholders during this research included:

- Failed long term programs due to leadership being tied to only one or a few individuals.
- Fear of employment losses due to rising levels of volunteering. While some types of volunteering may replace scientific work, the PERT sub-sector appears to create positions.
- A need for greater understanding on the link between volunteering and tourism.
- Additional aspects common to wildlife tourism, ecotourism and sustainable tourism.

Evidence of the balancing of perceived supply and demand factors can be seen in operational changes existing agencies have made over time. For instance, the Director of Global Volunteers 'cut the length of trips to accommodate professional's busy schedules, and added less strenuous options for retirees' (Klein in (Gazley, 2001). Groups such as the whale research agency, CERF, gradually increased the 'lecturing and course style' presentations in their trips to cater to demand. Earthwatch Institute operates a membership program and has worked hard to foster a long-term commitment to their own organization with repeat volunteers at around 30%. They have also tailored their approach as most early programs (1973) involved 'stars and rocks', areas where volunteers could cause little damage (Shapera in (Gazley, 2001). By 1985, 49% of trips dealt with life sciences and in 2001 71% were within the life sciences, and within the PERT definition, as Earthwatch Institute recognised the interest and abilities of volunteers in wildlife and ecological areas. More recently they have added less work intensive and shorter options (Earthwatch Institute, 2001).

Further Research

Further research is required to examine the extent the popularity of certain species or groups of species within the PERT sub-sector is demand or supply driven. For instance turtle tagging may be popular as the public find the animals attractive and care about the problems facing turtle populations around the world. Within wildlife tourism work has been done analysing species popularity (Woods, 2000) and the marketing of charismatic megafauna is easier than worthwhile but less popular or well-known areas of science. Turtle nesting occurs at night on warm climate beaches allowing volunteers free time during the day to enjoy the location, so holiday motivations may be additional relevant demand factors (Ellis, 2003).

Supply factors also determine the types of trips offered and here these include scientific concern about the declining populations of turtles, and the ability to use tourism to help promote alternative sources of income for local turtle collectors. Volunteers can also be trained relatively quickly to undertake turtle nest monitoring or collect certain data. Developing accepted protocols to ensure the validity of volunteer data is important (Mackney & Spring, 2001). The current supply levels of a specific trip may be due to the prior existence of operations with established protocols and acceptance of tourist involvement (such as turtle tagging, whale watching, and coral reef monitoring). These provide working examples for other researchers to adopt, possibly increasing the statistical occurrence of a research subject.

Another significant factor may be the difficulties of funding long-term turtle tagging and monitoring trips through conventional short-term grant processes. The potential influence of research costs on the supply of trips can be seen in various subject areas. Cetacean researchers require significant funds to offset boat costs and volunteer contributions are a potential source. Coral reef or marine ecology monitoring trips are also expensive. Extensive geographic areas and the physiological problems of long periods underwater have prevented scientists from collecting data they need. To help overcome this, scientists have developed appropriate protocols to allow volunteers to assist in data

collection (Darwall & Dulvy, 1996) capitalizing on the high levels of public interest in scuba diving and snorkelling.

Supply for these trips is partly based on decision making by natural resource managers (as well as academic institutions and others). The creation of programmes by natural resource managers that influence the values, attitudes and behaviours of the public towards wildlife and the natural habitat is encouraged (Duffus & Dearden, 1990). Local community involvement is important in achieving conservation goals and PERT-style trips are not seen as replacing these but are an additional technique to help natural resource managers and other agencies achieve their goals. In some areas there may be no (or little) community or little ability or interest in taking on volunteer work and therefore a need to bring in volunteers from outside the local area. Also, local volunteering may not solve the problem of a lack of research funds. Local volunteering and volunteering involving tourists are not mutually exclusive but the advantages and disadvantages of each need to be considered as well as the appropriate way to integrate the work of each.

PERT-style trips are not suited to all areas. The work required may be too dangerous, difficult or complex for non-specialist volunteer involvement. Sites may be inappropriate or volunteers simply not interested in helping due to the relative unattractiveness of the work, the location, the season or other factors such as safety and these logistical issues need to be understood.

Volunteer management issues concerning episodic volunteering in the field of the PERT sub-sector has only been partially examined (Gazley, 2001). The balance between altruism and self-interest as motivators is likely to be different to that of traditional volunteering and a preference for learning opportunities may exist (Gazley, 2001). While motivational issues in volunteering, tourism and serious leisure have been explored, aspects surrounding the retention rates of volunteers, the development of repeat participants and product loyalty in the PERT sub-sector requires further work. A high level of repeat participants implies the development of a skilled and knowledgeable pool of volunteers that may streamline the training, supervision and range of skills that can be undertaken. Alternatively, a high level of repeat participants may not facilitate broader goals such as public education. Clarification of the potential and actual outcomes from the current PERT sub-sector is necessary to allow the operation of the PERT sub-sector to be compared with other related areas such as the use of local volunteers rather than tourists, trips where tourists volunteer but do not financially support the project, or where tourists contribute financially only.

The location of the product market boundaries for the PERT sub-sector also needs further examination. This research is part of an on-going doctoral study and a very narrow definition was developed to allow subsequent work to be undertaken. Similar trips such as fossil or archaeological digs, research work undertaken by naturalist clubs and longer volunteer programs also need to be analysed.

Conclusion

This paper extended the ideas surrounding the definition of the PERT sub-sector (Ellis 2003) and identified the sub-sector's growth and current form. Much of the work analysing the global sub-sector of PERT was descriptive, using examples from a wide range of agencies and has been collated to highlight and provide indicative data on the PERT sub-sector. Agencies specifically operating PERT-style trips emerged in the early 1970s. Natural resource managers, governments, scientists, universities, commercial tour operators and not-for-profit agencies operate in this sub-sector, often in formal or informal partnerships, with not-for-profit agencies being the dominant operators. Initial research suggested that the PERT sub-sector is still relatively small in size, is wildlife-based, focuses on the Americas and regional differences exist. Management issues are closely related to volunteer management and operational tourism aspects.

Further theoretical work is needed to underpin the operational understanding of the PERT sub-sector. Research on the overlapping concepts in serious leisure, natural resource management, volunteerism and tourism is needed, particularly in the area of episodic volunteering, volunteer retention and product loyalty or repeat participants.

Literature and anecdotal evidence suggest the potential benefits for key stakeholders are extensive and that the PERT sub-sector is growing. Demand factors, driven by increasing consumer knowledge and interest in the types of trips on offer, and supply factors, largely driven by a need for alternative forms of income for researchers, appear to be positively influencing the availability of trips. Considerable further research on both the internal variation within the sub-sector and research on the whole sub-sector is needed. This will allow natural resource managers and tourism planners, as well as consumers, to make an educated choice concerning the most potentially suitable approach or type of trip for a location. This paper aimed to encourage further discussion and research in the PERT sub-sector to determine its ability to provide positive benefits to stakeholders and to examine its potential growth and management issues.

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